

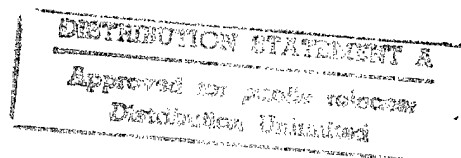
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# East Europe Report

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7 April 1986

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ECONOMY

CZECHOSLOVAKIA

#### MATERIAL MANAGEMENT SYSTEM DISCUSSED

Prague HOSPODARSKE NOVINY in Czech No 3, 1986 p 3

[Article by Eng Rudolf Peska, CSc, director general of the economic production unit Vitkovice, Ostrava]

[Text] To create our national income, it is necessary to process yearly about 3 billion tons of various materials and substrata which are relocated during the course of the production or storage process 8 or 12 times on the average, not counting the transportation of skryvka [as published] and coal mined in surface and subterranean mines. Their handling requires operational costs of approximately 120 billion Kcs a year, and today it engages more than 2 million workers in our country. This approximate account makes it perfectly clear that it is precisely here that we can find enormous opportunities for increasing labor productivity and probably the greatest potential source of work force, particularly for the tertiary sphere. Thus we encounter ideas about handling materials, storage management, streamlining the flow of materials, inventories etc., as we should, everywhere the intensification of the national economy and discovery of unused resources are being discussed. At the same time, the current state of storing and handling materials definitely gives us no cause for satisfaction.

During the past 20 to 30 years the world has seen considerable qualitative changes in warehousing. Exhausting manual labor has been supplanted by machinery and the number of workers in warehousing is tending to decline. Similar changes have occurred also in the process and inter-process handling.

#### The Situation as it Stands

Czechoslovakia has not kept pace with these progressive trends. An analysis shows conditions which can be described as:

--fragmentation of storage areas into a large number of plants which have small capacity and no potential for a more significant use of mechanization;

--a large number of unsatisfactory and obsolete storage facilities, of which 20 to 30 percent are at the margin of their economic life and roughly 40

percent are, from the construction and technical point of view, totally unsuitable for the given purpose;

--unsatisfactory allocation and dispersal of storage facilities into large cities and industrial population centers, for the most part in housing developments;

--a low level of mechanization of the storage processes, while the least mechanized storage facilities are those in localities with a high concentration of industry and population;

--a low level of mechanization and automation of administrative work (in about 65 percent of the storage facilities keeping records of the movement of inventories is done manually, and sophisticated computer technology is used only in less than 10 percent of storage facilities);

--a high number of accidents (in the handling of materials, transportation and storage there has been an incidence of about 106,000 injuries a year, which represents roughly 42 percent of all injuries in CSSR);

--a high incidence of damage and losses of stored materials, which, according to an educated estimate, reach approximately 8 billion Kcs a year.

This unfavorable situation, especially the demands on storage capacities, technology and workers, is further compounded by the unsatisfactory volume and structure of inventories. For example, total inventories in industry contain about 58 percent of production inventories, whereas inventories of unfinished production amount only to 24 percent and marketable inventories only 18 percent. Contrary to the measures aimed at increasing the creation of marketable inventories, it is mainly production inventories with a long turnover time that are growing and the share of marketable inventories in total inventories continues to decline. At the same time, the shares of production inventories and marketable inventories in advanced industrial countries are approximately equal--roughly 40 percent.

The machinery and equipment production base for storage management and handling of materials is also fragmented. It is made of 68 main producers in 18 departments. The development of the production of necessary technical implements, machinery and equipment keeps lagging behind requirements. As far as the long range outlook for volume is concerned, those will be satisfied only up to 65-85 percent. The product range of delivered equipment is in no way sufficient and, what is more, is mostly of lower technological level. For these reasons, the per capita outlay for machine and equipment inventory in storage and handling of materials is only about 48,000 Kcs per worker, which represents only about a third of what it is in other branches of the national economy.

Specialized production of necessary implements, machinery and equipment, as well as a central management, are practically nonexistent. Furthermore, there are no provisions for comprehensive planning and greater involvement by suppliers. Any possible importation of equipment places high demands on foreign currency and its use is therefore considerably limited.

## What We Manufacture Here

We are concerned as one of the important Czechoslovak manufacturers of equipment for the storage and handling of materials. Our range of products is very extensive. We manufacture suspension, cart, belt and link conveyors, loading, roller and pulley tracks, stationary, tree, console and drawer shelves, compacting and supporting equipment, many types of shelf bases, transfer equipment for shelf bases, etc. Our elevator carts and weighing equipment are also useful in storing and handling operations. We shall be manufacturing this extensive range of product also during the Eighth 5-Year Plan even though their continuous improvement places great demands on our preproduction stage and production itself. The share of production of this type of equipment currently amounts to roughly 6.5 percent of the total volume of goods produced here, and about 40 percent of goods produced in the concern enterprise Transporta Chrudim. However, we are well aware that this is not sufficient.

We are therefore looking for ways to solve the situation, even though no increases are planned during this 5-year plan in the capital construction of the production base for equipment and management of material, and Transporta Chrudim has as its priority the manufacturing of equipment for long-distance belt transportation for surface mining. In case of need, therefore, we are making certain of being operationally able to process certain orders by using the capacities of our other concern organizations. In accordance with the concept of developing the Northern Bohemian brown coal districts and consequent concepts of developing the production of equipment for surface mining after 1990, we shall continue, however, to take care of the growing demands for equipment for storage and handling of materials primarily in this specialized enterprise.

We consider our main task to be the constant improvement of the technical level of current product, the development and manufacture of new products and supplementary equipment, as well as the development of new storage and handling methods. In the course of the current 5-year plan, our Research Institute for Transportation Equipment Praha designed certain types of equipment for handling, such as, for example, a new generation of shelf bases equipped with automated controls. The system Robot in particular is one of the new storage and handling systems. It is a computer-controlled system. It consists of a transrobot (low flat-car equipped with lift fork), a transfer-robot (transposer for the transrobot), transelevator (special shelf base) and an elevator (elevator making possible the transportation of the transfer-robot and the transrobot). The advantage of this system--apart from the ability to design storage in many variants--is a better utilization of storage space and a minimization of procurement and operational costs.

A chapter in itself is inter-process storage and handling, which are closely linked to production technology, particularly in the case of the machine tool industry. A characteristic feature of the machine tool industry today is increasing automation, quick adaptability to new products, more flexible modification of engineering procedures, while integration of manufacturing equipment is increasing. The development requires an increasingly greater introduction of computerized machinery, industrial robots and manipulators.



The means for organizing and managing such production categories are precisely the inter-process storage and a fully automated inter-process transportation. Inter-process storage permits the storing of palletized production lots and their precise recording, and creates a minimum of necessary inventory prior to every engineering operation. Inter-process transportation must transfer, at the command of the directing computer, the pallet with stock from the warehouse to the engineering workshop and back in such a way that no stoppages of production machinery occur.

In some cases, however, the level of our equipment for inter-process storage and inter-process transportation does not meet fully the requirements for the automation of the production process, particularly as concerns the performance of equipment, its mutual interconnectedness and linkage to robots and manipulators. We are therefore getting ready to put in effect, as we are doing in the case of storage management, a substantial increase of the range and volume of such equipment so that they meet the requirements of modern construction and adaptability, and make possible a change in the flow of material and in the range of products.

Among the technically demanding plans for improvement, which we are currently implementing, we can count the light-weight buildings and foundation systems for areas that have been mined. Within the framework of this development, we are currently solving the problem of placing buildings in mined areas with the support of the steel construction of the shelf block, lightened steel construction of the shelf system, rectification of the shelf system when the underlying ground settles unevenly, using a method of loading the storage area from the point of view of even stress distribution in the base plate. During verification, the total facility will be gauged according to the stress and settling of the ground. This will take a lot of effort, but without it we cannot make new break-throughs in putting science and technology into practice.

A neglected area from the point of view of technological planning and internal modernization is the storage and handling of metallurgical materials. Apart from the little care given by producers, unnecessary stockpiling of materials in storage resulting from an inadequately functioning metallurgy marketing base, long-term storage norms, and unsatisfactory supply-demand relations, also contribute considerably to this situation. Warehouses of metallurgy materials are equipped with the same technology as they were 50 years ago. For these reasons, we are now initiating, for example, the development of equipment for binderless and automated systems with a carrying capacity of up to 5,000 kg for handling and storing of sheet metal and bar stock.

#### Question Marks in the Goal-Oriented Plan

Resolutions of the CSSR Government Nos 242-1984 and 262/1984 assigned the task of producing a comprehensive solution of the situation in Czechoslovak warehousing management by means of the state goal-oriented plan A 11. The program includes technical development in this area, development of an experimental and production base, capital construction, and other spheres on which the effective course of its implementation is contingent (coordination, management, and control). At the same time, it creates conditions for a functional

interconnecting of the automated production systems with the handling and storage systems.

We consider this goal-oriented program to be very progressive; we support it, and we intend to take an active part in its implementation. However, in our stated opinion for the opponency procedures of the tasks of the state plan for technological development A 11-152-002 Unified Line of Built-in and Free-Standing Shelf Systems for Pallets and A 11-153-003 Universal Automated Handling and Storage Systems Based on Shelf Transrobots and Manipulators, which are a component of the technological content of the state goal-oriented plan A 11, we made some critical comments regarding these tasks and pointed out some still unclarified problems of the whole program. Although they have been discussed already at the level of the Federal Ministry of Metallurgy and Heavy Machinery, the Federal Ministry of General Machinery, the State Planning Commission, the State Commission for Development and Coordination of Science, Technology and Investment, the Administration of Federal Material Reserves, as well as at the level of principal producers and users of the equipment, they still have not been all successfully resolved.

About 30 manufacturing organizations will take part in the state goal-oriented program A 11. However, the development of their production programs in the field of equipment for storage and handling of materials has not been fully coordinated as yet, and there have been no agreements among the principal producers concerning the distribution and specialization of the range of products. Such conditions lead to a fragmentation of forces, capacities, and resources, to duplication in research and development, and to lowering of the rate and effectiveness of innovative trends in given sectors.

On our initiative, we took the first step toward resolving this situation by reaching an agreement on the division of labor by direct negotiations between our concern and the economic production unit Strojsmalt, concerning the composition of the range of shelf bases and shelves. But it is essential that the coordinating organization of the state goal-oriented plan A 11 (Administration of Federal Material Reserves) resolve this matter in a comprehensive way.

After a detailed study of the state goal-oriented plan and its implementation, it further appeared that so far the linkage of the program to the development of the technological base and the production base by the manufacturers of the equipment, or to the development of the capital goods base for the user sphere, has not been fully worked out. For example, a full implementation of this program in the concern Vitkovice is contingent for the most part on the development and modernization of the production base in the concern enterprise Transporta Chrudim. The manner of ensuring the implementation of this action is at present the object of negotiations between our concern, the State Commission for Development and Coordination of Science, Technology and Investment and the State Planning Commission.

A more serious problem is the fact that a considerable portion of the capital investment projects by users, included in the blueprint for the Eighth 5-Year Plan, will be implemented between 1988-1989. The plans for these projects have to be completed by the beginning of the Eighth 5-Year Plan. That means that it will not be possible to make full use of the results of the tasks of

the state plan for research and development progress, achieved in the framework of the state goal-oriented plan A 11.

An effective implementation of the state goal-oriented plan A 11 also requires that we make certain of the involvement of the general developer and engineers working on the system. Currently there does not exist in CSSR any organization for these functions. Building such an organization takes considerable time, and other alternatives, such as setting up an Association of Producers, or having other non-specialized organizations oversee these functions, will obviously not be the best solution. To be able to overcome this current state of affairs, we have turned, at least in our range of products, to a higher form of deliveries of equipment for storage and handling of materials--turnkey deliveries including assembly and servicing.

According to our information, there are currently being prepared, in the framework of the state goal-oriented plan A 11, further scientific research development projects, which will also be accomplished by means of tasks of the state plan for research and development. An essential condition for a successful planning and realization of these is to negotiate definite supplier-consumer relations between the coordinating workplace, the planners, implementors, and users. Also, the requirements for non-investment funds for planning will have to be worked out, verification made of the availability of essential imports as well as of domestic implements and equipment, which will be defrayed from the non-investment funds. Most of all, we shall demand that the coordinating workplace, together with the coordinating organization of the state goal-oriented plan A 11, ensure the domestic development and deliveries of fuels and control systems in a direct linkage to the equipment being developed for the storage and handling of materials.

We can assume that the objective requirements for implementing the state goal-oriented plan A 11 will be applied also to the other planning and implementing economic production units and organizations of the user sphere. It will be essential, therefore, that the solution of these very complicated problems be given the necessary attention by the coordinating organization of the state goal-oriented plan A 11 (Administration of the Federal Material Reserves), in cooperation with competent central agencies, in such a way that there is no negative impact on the technical level of attained results of research and development, planned terms, the extent of its realization, its effectiveness, etc.

At present we are completing the plans for the development of the machine tool production of our concern for the Ninth 5-Year Plan. In comparison with the Seventh 5-Year Plan we are counting there with a substantially higher average index of growth of the machine tool production than in the metallurgy production. According to our plan, this index will be considerably exceeded by trends in the development of the production of equipment for warehousing (index 2.328), transportation carts (1.543), and equipment for inter-processing handling (1.719). Concurrently with the development of the production of this equipment, we shall make an effort to improve the effectiveness of this production, which in certain sectors and products does not meet our requirements in all indicators. We shall have a remarkable opportunity to achieve these great goals by our active participation in the designing and implementing of the state goal oriented plan A 11.

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7 April 1986

## CZECHOSLOVAKIA

## ECONOMY

## WAGE AND EMPLOYMENT DEVELOPMENTS 1985 TABULATED

Prague PRACE A MZDA in Czech No 1, 1986 pp 51-54

[Text] During the first 3 quarters of 1985, employment in the socialist sector of the national economy (excluding the unified agricultural cooperatives) rose by 65,000 (0.6 percent) and amounted to 6,871,000 actual workers and 6,690,000 full time equivalent workers. The increase in the number of workers is 0.1 point less than projected in the state plan for the whole year. In the Czech Socialist Republic, the number of actual workers rose by 38,000 (0.8 percent) to 4,812,000 persons, and in the Slovak Socialist Republic it rose by 27,000 (1.3 percent) to 2,059,000 persons.

As of September 30, there were 3,208,000 women working in the socialist sector of the national economy (excluding the unified agricultural cooperatives), which is 44.6 percent of the total number of workers as of that day (46.5 percent last year). Those who were on maternity leave (333,000) are not included in the recorded number of workers.

There was a smaller than expected increase in the number of workers in industry (roughly 8,000 fewer) and in construction (2,000 fewer). Most of the total increase of 15,000 industrial workers occurred in the electrical equipment industry (almost 5,000), whereas in branches of the consumer industries employment is stagnant or declining. Branches of the tertiary sector, primarily retail trade, health care, education and communications, continue to maintain higher increases in the number of workers.

In most of the branches, the category of workers showing a relatively faster increase during this year are the technical-managerial personnel. Within the main activities of the industrial enterprises, their numbers grew by 6,000 (1.2 percent), whereas the number of workers increased by only 4,000 (0.2 percent). On building projects of construction organizations, the number of technical-managerial personnel increased by 0.7 percent, but the number of workers declined by 1,000 (0.3 percent).

Since the beginning of the year, wages paid at the end of the third quarter to employees of the socialist sector of the national economy (excluding the unified agricultural cooperatives) came to 175 billion Kcs, that is 4.6 billion Kcs (2.7 percent) more than during the same period in 1984. In addition, 3 billion Kcs were paid out in other personal costs.

1. Number of Workers and Average Monthly Wages in Main Branches in 1-3 Quarters of 1985

<u>Branch</u> <u>(field of activity)</u>	<u>Average</u> <u>Recorded</u> <u>Number of</u> <u>Workers</u>	<u>Increment:</u> <u>decrease (-) against</u> <u>1-3 quarters of</u> <u>1984</u>		<u>Average</u> <u>Wage in</u> <u>Kcs (per</u> <u>actual</u> <u>Worker</u>	<u>Increment:</u> <u>decrease (-) against</u> <u>1-3 quarters of</u> <u>1984</u>	
		<u>abs.</u>	<u>in</u>		<u>abs.</u>	<u>in</u>
			<u>percent</u>			<u>percent</u>
Socialist sector of the national economy (exclusive of unified agricultural cooperatives)	6,871,337	64,576	0.9	2,830	48	1.7
of that:						
Industry as a whole	2,724,568	14,872	0.5	3,030	52	1.8
of that: planning groups:						
coal mining	180,556	1,988	1.1	4,286	26	0.6
heat and power production	74,558	1,564	2.1	3,374	92	2.8
iron smelting	153,855	-739	-0.5	3,402	58	1.7
chemical industry	130,521	563	0.4	3,175	74	2.4
rubber industry	37,513	210	0.6	3,007	93	3.2
machine tool industry as a whole	1,033,143	10,570	1.0	3,028	54	1.8
of that:						
electrical equipment industry	233,520	4,780	2.1	2,829	83	3.0
building materials industry	107,893	-555	-0.5	3,036	67	2.2
wood processing industry	115,142	-813	-0.7	2,648	52	2.0
glass and china-ware industry	86,373	70	0.1	2,642	40	1.6
textile industry	211,432	-1,405	-0.7	2,490	48	2.0
clothing industry	54,827	-77	-0.1	2,494	21	0.9
leather and footwear industry	83,655	174	0.2	2,757	14	0.5
food processing industry	196,742	1,710	0.9	2,702	55	2.1
Construction	550,083	1,056	0.2	3,125	69	2.3
Planning organizations	52,825	1,136	2.2	3,403	21	0.6
State farms	165,933	1,250	0.8	2,929	68	2.4
State forests	97,550	1,699	1.8	2,963	88	3.1
Rail transportation	210,637	1,212	0.6	3,344	-16	-0.5
Car transportation	103,309	483	0.5	3,114	18	0.6
Communications	127,103	1,497	1.2	2,494	19	0.8
Domestic trade as a whole	598,132	7,123	1.2	2,284	12	0.5
of that: retail	250,361	4,523	1.8	2,173	6	0.3
public nutrition	164,482	1,458	0.9	2,100	7	0.3
Enterprises of local production and services	234,398	1,706	0.7	2,464	43	1.8
Education	428,230	7,608	1.8	2,583	87	3.5
Health care	335,131	7,373	2.2	2,661	83	3.2

2. Structure of Average Monthly Wage in Main Manufacturing Branches and Index of the Growth of Labor Productivity in Industry and Construction in 1-3 Quarters of 1985

<u>Branch</u> (field of activity)	<u>Average Monthly Wage</u>		<u>including--in Kcs</u>			<u>Index</u> <sup>2</sup> <u>of Labor Productivity</u>
	<u>Total</u> <u>in Kcs</u>	<u>Index</u> <sup>1</sup>	<u>Basic Wages</u> <u>Incl. Extra Pay and</u> <u>Compensations</u>	<u>Bonuses and Rewards</u>	<u>Shares in Economic Results</u>	
Industry as a whole	3,030	101.8	2,383	590	57	104.3
of that: planning groups:						
coal mining	4,286	100.6	3,255	955	76	95.5
heat and power production	3,374	102.8	2,652	660	62	103.0
iron smelting	3,402	101.7	2,746	589	67	107.7
chemical industry	3,175	102.4	2,446	643	86	106.5
rubber industry	3,007	103.2	2,294	665	48	103.7
machine tool industry						
as a whole	3,028	101.8	2,430	550	48	106.2
of that_ electrical equipment ind.	2,829	103.2	2,251	516	62	106.8
building materials industry	3,036	102.2	2,418	575	43	103.3
wood processing ind.	2,648	102.0	2,087	528	33	102.0
glass and chinaware industry	2,642	101.6	2,079	513	50	103.2
textile industry	2,490	102.0	1,894	544	52	105.0
clothing industry	2,494	1009.9	1,925	521	48	108.1
leather and footwear industry	2,757	100.5	2,056	643	58	106.7
food processing ind.	2,702	102.1	2,092	516	94	100.2
Construction	3,125	102.3	2,512	575	38	103.4
Planning organizations	3,403	100.6	2,586	698	119	.
State farms	2,929	102.4	2,449	348	132	.
State forests	2,963	103.1	2,374	533	56	.
Rail transportation	3,344	99.5	2,719	532	93	.
Car transportation	3,114	100.6	2,703	339	72	.
Communications	2,494	100.8	2,052	357	85	.
Domestic trade	2,284	100.5	1,955	254	75	.

1) In percent share of average wage during 1-3 quarters of 1985 and 1984

2) In percent share of labor productivity in adjusted value added during 1-3 quarters of 1985 and 1984. Index of labor productivity in industry in gross production was 102.6, in construction in basic building production 100.8.

3. Numbers and Average Monthly Wages of Workers and Technical-Managerial Personnel  
in the Main Activities of Producing Branches in 1-3 Quarters of 1985.

<u>Branches</u> (field of activity)	<u>Workers</u>			<u>Technical-Managerial Personnel</u>		
	<u>Average Registered Number</u>	<u>Average Wage in Kcs</u>	<u>Index</u> <sup>1)</sup>	<u>Average Registered Number</u>	<u>Average Wage in Kcs</u>	<u>Index</u> <sup>2)</sup>
Industry as a whole	1,859,440	2,972	101.9	543,693	3,429	101.4
of that: planning groups:						
1) coal mining	132,498	4,387	100.4	23,751	5,027	101.5
heat and power production	47,271	3,311	102.7	20,065	3,755	103.3
iron smelting	111,634	3,374	101.9	26,915	3,944	100.9
chemical industry	75,604	3,144	102.4	26,426	3,753	102.1
rubber industry	26,053	2,954	103.5	6,096	3,441	103.2
2) machine tool industry						
as a whole	651,508	2,982	102.2	244,400	3,277	101.2
of that: electrical equipment industry	143,756	2,681	103.6	53,775	3,200	102.0
building materials industry	76,988	2,976	102.4	22,741	3,475	102.1
wood processing ind.	85,985	2,586	102.4	18,450	3,094	100.6
glass and chinaware industry	65,559	2,543	102.0	13,275	3,265	100.1
textile industry	162,788	2,383	102.1	30,681	3,168	101.4
clothing industry	42,998	2,392	101.2	7,723	3,140	99.9
leather and footwear industry	63,997	2,670	100.5	11,790	3,368	99.9
food processing industry	142,005	2,619	102.2	38,028	3,192	101.7
Construction	300,854	3,064	102.5	92,940	3,630	102.0
State farms	133,122	2,910	102.4	24,080	3,332	101.7
State forests	72,807	2,787	103.5	22,260	3,612	102.3
Rail transportation <sup>2)</sup>	66,886	3,795	99.4	56,660	3,364	99.3
Car transportation	59,418	2,930	100.9	17,439	2,994	98.8
Communications <sup>2)</sup>	71,592	2,123	101.2	24,896	3,268	99.8
Domestic Trade <sup>2)</sup>	396,145	2,150	100.1	95,859	2,814	101.4

1) In percent share of average wage in 1-3 quarters of 1985 and 1984.

2) In place of workers, operational and service personnel are shown.

The implementation of the second stage of ZEUMS (Program for Increasing the Economic Effectiveness of the Wage Systems) is having an impact on the structure of wages inasmuch as the share of basic wages in the wages paid is beginning to increase. In economic organizations this share grew in the third quarter by 0.5 point to 82.4 percent since last year.

The outcome of wage regulation in the economic organizations has been less favorable than last year, particularly as it concerns the number of organizations that exceeded the mandatory limits, and the amount by which they exceeded them, which reached 512 million Kcs (133 million Kcs a year ago). However, for economic organizations as a whole, the wages payable disbursed and charged to costs were 4.5 billion Kcs less than was the total of available wages payable; that is 3.2 percent of the available amount (in 1984 it was 3.8 percent). The organizations could transfer, up to the level of this saving, resources from taxable profits to the bonus fund for paying shares in economic results. Thus far, since the beginning of the year, 3.6 billion Kcs were paid out of the bonus fund, which is somewhat less than during the same period in 1984. The balance of the fund as of the end of the third quarter was 7.5 billion Kcs, which is roughly 1,400 Kcs per worker in the economic organizations.

The average monthly wage of workers in the socialist sector of the national economy (excluding the unified agricultural cooperatives), calculated for actual persons, grew by 48 Kcs (1.7 percent) compared to the same period of last year, to 2,830 Kcs. When calculated for full time equivalent workers, the average wage was 2,907 Kcs. Considering the fact that, as a consequence of a longer work year, in the fourth quarter the increase of the average wage for the whole year is expected to be 1.9 percent, the increase of the average wage as projected by the state plan (1.6 percent as compared to the actual case in 1984) will be slightly exceeded.

In the Czech Socialist Republic, the average wage per actual person increased by 45 Kcs (1.6 percent) to 2,848 Kcs (for recalculated number of workers it came to 2,939 Kcs) and in the Slovak Socialist Republic it increased by 55 Kcs (2.0 percent) to 2,789 Kcs, or to 2,833 for the recalculated number of workers.

The increase of the average wage in 1985 has been higher in the budget organizations (it grew by 3.0 percent to 2,574 Kcs) than it has been in the economic organizations (by 1.5 percent to 2,574 Kcs) as a result of salary adjustments in health care and education as of January 1, 1985. During that year these branches also registered the highest growth of average wage, together with the electrical equipment industry, the rubber industry, and state forests.

Labor productivity in industry and in construction increased more than was projected in the annual state plan (by 0.6 point in industry, and by 0.7 point in construction), while the increase of labor productivity in adjusted value added was considerably faster than in production. Nevertheless, industry did not succeed in achieving a ratio between the growth of labor productivity and the average wage as should have resulted from the annual state plan.



ECONOMY

CZECHOSLOVAKIA

## UNLAWFUL ACTIVITIES IN ECONOMIC SPHERE

Prague LIDOVA DEMOKRACIE in Czech 13 Feb 86 p 1

/Text/ The theft of property from socialist ownership is the most common criminal act in the CSSR and its share of the overall criminal activities has fluctuated around 18 percent in recent years. The misappropriation of things, either by simply filching or by breaking in, predominates; embezzlement and fraud are less common (but more dangerous, since they usually cause considerable damage and are harder to detect). The least frequent but most serious form is robbery. In 1984 (last year's data have not yet been processed), almost 12,000 people were indicted for the criminal act of stealing property under socialist ownership. More than half of them (as has been the case for years) were actually employees of the injured socialist organizations....

There is also a similar problem in maintaining economic discipline, the deliberate violation of which allows theft worth millions. The most common criminal act here is violation of responsibilities in handling financial and material resources. And this can be committed only by responsible finance employees in an attempt to secure unauthorized advantages for their organizations or to offer such unauthorized advantages to someone. Thus funds are created under the table for paying blackmarket wages, for offering bribes, for expenses for (unnecessary and exaggerated) presentations, etc. If we add to this the violation of safety regulations, damages to consumers, unauthorized undertakings, and some other activities, we arrive at the broader field of what is called economic crime.

The struggle against it and for the protection of the socialist economy is one of the most important areas in the fight to preserve socialist legality. Indeed, any kind of violation of legality in this field can become either the direct cause of a criminal act or at least a condition which makes it easier to commit. Moreover, economic crime and an indifferent attitude toward acts included in it also distort people's legal attitude and can negatively affect their trust in our legal system.

All this is well known. So how is it possible that we still cannot succeed in effectively limiting economic crime? The main reason is obviously that the state and economic organizations and their audit and review agencies are not carrying out their legally assigned reporting obligations. An example? In 1984, members of the Public Security force in Prague uncovered fully 80

7 April 1986

percent of the cases of economic criminal acts. The audit and review agencies reported 18 percent and only 2 percent were reported by economic employees themselves. It is clear from these data that, except for the Public Security agencies, four-fifths of the economic offenses would have remained undiscovered.

Certainly we would all agree that the fight against crime in general and against its economic form as well cannot be left just to the agencies occupied with criminal operations. Of course, when a statement on the status of socialist legality was produced in the Federal Assembly last year, it stated that the audit agencies of economic state, and social organizations many times do not even report their suspicions of criminal acts to the prosecutor or State Security agencies, let alone discuss it with them on a timely basis, especially when it involves a violation of economic discipline or cases of poor quality production. Departmental or group interests also come into play when they are wrongly given preference over those of society as a whole and attempts are made at excusing the attitude of opposing the law and preventing the execution of responsibility for punishment. A dual morality is thus created, even though in substance the commission of a criminal act is an unambiguous matter.

If we then truly want to fight effectively against economic crime, we must thoroughly and correctly prosecute all those who commit criminal acts. The prosecutor cannot supplant the agencies of economic management and audit; their supervisors and responsible employees must finally begin to carry out their responsibilities not only in the organizational and management areas, but also in the sphere of control. There is only one way: establishing order and discipline within the work collective and proper reaction to antisocial manifestations. Only thus will it be possible not only to punish cases of economic crime, but also directly to prevent them.

6285/12228

CSO: 2400/188

## DEVELOPMENT OF PUBLIC DATA BASE DISCUSSED

Prague MECHANIZACE A AUTOMATIZACE ADMINISTRATIVY in Czech No 9, 1985 pp 330-332

[Article by Engineer Radko Hochman, VUS (Communications Research Institute), Prague: "Preparation for the Development of a Czechoslovak Public Data Network"]

1. Development of Data Services in the CSSR

The data transmission services of the Czechoslovak communications administration have officially been available since 1971. They began at a time when, in some Western countries, new specialized public networks were being developed and intended for meeting the needs of data communication. However, in view of conditions in the CSSR, for practical reasons there could only be one concept of data services. This concept was based on the principle of using the existing telecommunications networks, i.e., to create data circuits the public telephone network, integrated telegram network, and fixed circuits of various types are used, together with complementary transmission devices (signal convertors) supplied by the communications organizations or owned by the users themselves. This concept holds true today and, in a practically unchanged form, will continue to the next few years. Within the framework of this concept, there is a continuous search for ways to achieve increased quality and complexity of data services and to meet evergrowing quantitative demands. The rate of growth of the use of data services keeps increasing year by year. After an initially isolated application, toward the end of the 1970s the semiannual growth of the number of data stations gradually increased to approximately 20 percent, and under the current Five-Year Plan is climbing as high as 40 percent. Toward the end of 1984, the absolute number of data stations surpassed 2,000. At the same time, it is apparent that the actual rate of growth could be even greater. However, at present there are a number of negative factors which make it possible to satisfy a number of totally realistic demands of users (difficulties acquiring transmission means--modems, insufficient capacity and quality of the telecommunications network in some areas, mainly in large local networks or, in contrast, in the peripheral areas of the network, etc.).

## 2. Creation of Public Data Networks in the World

Basically identical forms of fulfilling data transmission requirements were initially applied in all countries, but of course at different times depending on specific conditions and demands relating to the type and extent of computer technology utilization. It is this change regarding the development of computer technology and its application that is the main agent determining the direction and stage of development of data communication means in the telecommunications sphere.

At a certain stage of development in the construction of long-distance data processing systems, extensive so-called users' data networks come into being and ensure data communications within these basically closed user systems. The growing demands of users on the operational parameters of the data circuits, particularly on connection quality and the speed with which the connection is established, are running up against the capabilities of the existing public commutation networks, i.e., the telephone and telegraph network. As a result, large numbers of data circuits are being created using fixed, dedicated circuits.

The users' networks designed in this way are noted for their high quality of transmission and almost instantaneous connection times. However, the way they are built results on the one hand in pressure on the telecommunications administration to ensure the necessary reserves in the telecommunications networks--this despite the fact that the operational utilization of technical means is relatively small--and, on the other hand, in demands from users regarding the high costs of acquiring and operating data communications subsystems and the need to dismantle or eliminate a certain proportion of the entire system's processing capacity for the management of communications in such a network or (in large systems) to transfer communications functions from the main computer to the special communications processors whose operational systems and technical equipment are adjusted to the management needs of the communications subsystem.

Such a procedure, which would lead to the creation of a number of individual closed user networks, which in addition have a tendency to overlap one another in terms of geographic coverage, is proving undesirable from the broader social perspective. Its disadvantages have quickly manifested themselves in countries where the utilization of extensive systems of long-distance data processing is extensive. In contrast, the telecommunications administration began to point out in this regard that it would be possible to provide equivalent services significantly more effectively by using newly-constructed public networks, and refused to become the sole renters of transmission circuits.

It was thus attempted to solve the problem by establishing a public data network (VDS) capable of offering users data services of a quality comparable to that provided by the nonpublic user networks built on the basis of fixed circuits and suitable for being adapted to presumed future needs. In 1972, the International Consultative Committee for Telephone and Telegraph (CCITT) took up this unusually demanding and complex task. It established a new

special study group (No. VII) and, in close cooperation with the ISO (International Organization for Standardization), the communications administrations of developed countries, and large manufacturers of computer and telecommunications technology, CCITT drew up the concept of public data networks formulated in an X Class International Recommendation of the CCITT. Recommendations have been gradually published in 1976, 1978 and 1984, and more are in preparation.

Many of the characteristic features of public data networks differ significantly from those of other telecommunications networks. Mainly, the latter are digital only, starting from the initial interface. Another, and perhaps the most significant, distinguishing feature is the extensive system of participation and terminal devices, the parameters of which are different in many respects, despite which the network must still allow for mutual communication. It is also necessary to meet a number of special demands resulting from the nature of the users' systems. Public data networks make an extensive system of supplementing or complementary services available for this purpose.

Accordingly, Recommendation X 1, which defines the so-called user classes of VDS services, and Recommendation X 2, defining the systems of basic and supplementary VDS services, may be looked upon as the CCITT's basic recommendations with regard to public data networks.

According to Recommendation X 1, there are 11 user classes, of which classes 1-7 are allocated to the circuit switching network and classes 8-11 are allocated to the packet switching network. Each of these commutation principles has its own application advantages.

The principle of switching circuits is a classic principle of creating connections between the communicating participants in a telecommunications network. The specific application of this principle in a public data network lies mainly in the fact that the actual communications system, as well as all the technical devices connected to it, must allow for communication by participants from a number of various user classes, even though of course only those participants who are equipped with compatible terminal devices can mutually communicate, meaning participants of the same class.

In the case of the packet switching, only a so-called "virtual connection" is established between the communicating participants, i.e., a means of directing information packets with precisely defined formats which convey prepared data among the participants. Here, communications between two participants are divided into at least two time intervals which succeed one another: the transmitting participant to the network in one interval, and the communication network to the receiving participant in the next. The data circuits between switching packets are time-shared by all the virtual connections activated in a given direction.

In the packet network, it is basically assumed that the participants are connected by an interface meeting the specifications of CCITT Recommendation

X 25. However, complementary PAD (Packet Assembly/Disassembly Facility) services enable nonpacket participants in network user classes featuring switch circuits, or users working in the telephone or telegraph network, to access the network. From the user's point of view, the ability of the network to convert a user's transmission speed, codes and communications protocols, and therefore permit mutual communication between participants whose terminal devices do not allow for direct communication, may be considered to be the most significant contribution of the principle of packet switching.

In dividing the participants into user classes, users' transmission speeds and types of transmission have been designated for both types of public data networks. For all user classes, an extensive system of complementary services has been defined, making it possible to meet specific demands of individual participants.

Using a complex of services offered by public data networks, it is possible to create practically all system device configurations of currently known computer technology designated for various utilizations (batch processing of mass data, scientific and technical calculations, interactive information systems, etc.). At the same time, from the standpoint of focusing aims and organization, both user systems that are totally or partially closed, or--and mainly in a network with packet switching--so-called open computer systems may be involved.

Basically, the only condition that must be met in order to be able to connect equipment meant for data communications to the public data network is the compatibility of the participant's interface, not only mechanically and electrically, but a functionally and in terms of protocols as well. This requirement is being met to the maximum possible degree by international standardization through the joint efforts of the CCITT and the ISO.

In addition to using public data networks for purposes of data communications, these networks also make it possible to introduce some new telecommunications services. For their technically and economically effective realization and the attainment of high qualitative parameters, use of the public data network as a guest network is an important prerequisite. This involves mainly text-related services and graphics communications which are among the new, so-called "telematic" services, namely the Teletext service, and Facsimile-4 services.

### 3. Prerequisites for the Construction of a Public Data Network in the CSSR

Despite a number of limiting factors, the rate of development of the utilization of data services in the CSSR is increasing annually. With the quantitative growth in the volume of these services, the qualitative demands have begun to change. Above all, there is an increase in the demands on the operational characteristics of the offered services (transmission reliability, the speed of connection, transmission speed, etc.). Considering expected developments in the application of computer technology and the resulting growth in the demands on data communications services, and further considering the anticipated interest in the introduction of new text and graphics communications services as an important means of rationalization, already under the 7th Five-Year Plan the initial steps were taken to begin research focused on the prospect of providing all these services.

The basic initial step was to project the development of data, text and graphics communication services in the CSSR through 2000. This projection, drawn up in 1982, shows that by as early as 1990 the number of data stations working in the public telephone network should reach 3,000 to 5,000 while the data stations on dedicated circuits should number 4,000 to 5,500. Considering that as yet there is no reason to consider this to constitute saturation, growth in the following decade is estimated to be at approximately the same rate. In addition, it may be assumed that by as soon as the end of the current Five-Year Plan, there will be a genuine interest in the introduction of new services, namely teletext services.

The aforementioned prognosis already beginning to be borne out by a number of serious projects, including intentions regarding the application of computer technology that are already being put into use or are being prepared for the near or more distant future. Examples:

- planned construction of a national network of computer centers of state statistical administration;
- gradual reconstruction of the SBCS (State Bank of Czechoslovakia) data network;
- construction of the national VTEI (Scientific, Technical and Economic Information System);
- preparation of activities in the area of automated funds transfers for the public;
- preparation of automated control systems in a number of departments, etc.

A characteristic feature of all these systems is the expansion of their coverage, in a number of cases to the entire area of a state or a republic, with a large number of terminal locations and networking points on several hierarchical levels. Fulfilling these aims as regards the number of data stations represents a growth leap that is significantly reflected in the entire trend of development. Simultaneously, it is reasonable to expect that demands as regards the qualitative parameters of the data services sought will be increasing as well.

In sum, therefore, it may be expected that the demands on the provision of significant volumes of telecommunications services will be such in terms of quality that there will be only one way to create the conditions for meeting them, namely the construction of a public data network.

#### 4. Preparations for Constructing a Czechoslovak Public Data Network

The general problems of constructing a public data network have been within the framework of research tasks for several years, the goal being to keep in touch with the rapid developments in this field in the developed countries and to constantly prepare for the solution of problems associated with the construction of a public data network in the CSSR in such a way that the

approach adopted and the technical parameters for its operation would, if possible, reflect prevailing standards at the time the effort to establish it is made.

One of the most important issues is the choice of the switching principle of the public data network, i.e., the decision whether to build a network with circuit switching or packet switching. There are many different technical, economic and operational views on this issue, compounded under our circumstances by the additional problem of the realistic availability of the necessary technical means. To date, the following facts have been of primordial importance:

- each of the two systems has its advantages and disadvantages (in a mutual comparison as well as in absolute terms);
- the preference for one of the switching principles over the other cannot be uniformly stated, not even in countries that already have a data network in place; in many cases, these networks are deliberately set up alongside one another and are developed simultaneously;
- the above-mentioned prognosis of the development of data services in the the CSSR indicates that so far, a relatively insignificant percentage share of current real needs within the total volume of public data network services are for packet communications;
- assuming certain prerequisites, it is advantageous to move toward the integration of digital services into one network, i.e., toward the construction of a digital network with circuit switching, which would ensure the existing telegraph and new data services in user classes 1 through 7;
- the principle of packet switching appears to be more prospective, of course from the viewpoint of the distant future, when it is assumed that it will be possible to fully utilize all the characteristic properties of this principle.

Quite apart from whatever conclusions will be reached in the course of deciding on the approach to the Czechoslovak public data network, it is already provable that there are objective reasons for beginning its gradual construction in the 1990-1995 period. According to projections, by 1990 there should be already be a potential participation base in place numbering approximately 4,000 participants, including the users of fixed circuits and the participants in teletext services; in 1995, this figure would rise to 10,000 participants, and in 2000 to approximately 20,000 participants (of course, with a deviation of  $\pm 35$  percent). In any case, this represents a significant volume of services whose economic and noneconomic social effects should justify the relatively high costs of developing the public data network.

In the plans for research under the 8th Five-Year Plan, it is expected that research and project preparation for the carrying out the experimentation



relating to the Czechoslovak public data network for 1989 will begin in 1985. The goal is to construct an experimental network for a limited circle of users so as to conduct an operational technical experiment in which:

- experiments will be conducted with designs and projections of the network;
- experiments will be conducted with the installation and operation of the new technology;
- user interest in the services of the network will be examined, as will their reactions with regard to the qualitative parameters of these services;
- a realistic operational and technical basis for more precisely designing the construction of the network in the succeeding stages will be obtained.

Therefore, constructing the experimental public data network will create the nucleus from which further construction can gradually continue. Considering the nature of the goals which should be reached with the construction of the experimental network, it will be necessary to proceed very carefully with the selection of the technical means. The basic prerequisite, therefore, must be the use of tested system components with guaranteed technical and operational parameters, at least in all key points of the network.

Such means will not be available in the CSSR within the time frame of the experiment. It is therefore necessary to import them. Be that as it may, during the preparation of the research, the feasibility of meeting development demands and the manufacture of at least some components by Czechoslovak industry will be pursued, with the goal of using them in later stages of construction.

## 5. Conclusion

Construction of a public data network is a very serious and demanding step. Obviously, it means a basic qualitative change in data service availability, establishing the prerequisites for significant cuts in the operating costs of user systems utilizing long-distance data transmission and for the introduction of new types of telecommunications services, such as certain text and graphics communications services.

The generally accepted positive evaluation of the effects of constructing a public data network is verified by the fact that these networks have been constructed in all Western European and in a number of other countries of other continents within a relatively short time span, between the mid-1970s and the early 1980s. Gradually, the networks are connected internationally, or further networks of a supranational character are built. This creates the conditions for broad application of modern data, text and graphics communications services, even involving international exchanges of information of all types. The dynamics of the development of national and international public data networks are reaching an unusually high level; in the relatively short time since the beginning of the operation, the number of participants in them has already approached the number of participants in the telex network.

Of the socialist countries, so far only Hungary has completed the first stage of construction of a public data network (in conjunction with the modernization of the telegraph network in 1982). In other countries, the preparations for constructing such networks is in various stages. Assuming the construction of the experimental network in the CSSR as well as follow-up with gradual development using state of the art technical means at the time of construction, a level comparable to world standards will be reached and the prerequisites will be met for meeting the social needs for modern forms of communications, even in a long-term perspective.

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CSO: 2400/150

ECONOMY

CZECHOSLOVAKIA

#### FUEL AND ENERGY SITUATION SUMMARIZED

Prague HOSPODARSKE NOVINY in Czech No 3, 1986 p 2

[Article by Frantisek Antene, employee of the Central Committee of the Czechoslovak Communist Party]

[Text] The distribution of fuels and energy during the past year generally went smoothly, and our fuel-energy base held up even under difficult weather conditions. This was the result of an abiding and consistent attention of party and government agencies who also committed considerable resources to its development, and also owing to great self-sacrifices of all those working in the mining, energy and gas industries, as well as in the machine-tool industry, construction and transportation.

Generally we were able to cope with even the rather complicated arrangements for the winter season. After all, as a consequence of two waves of arctic frosts in the first quarter, and hence a considerable increase in the consumption of all types of fuel and energy which amounted to almost 1.5 million tons of standard fuel, we began making these arrangements with considerably lower inventories than in previous periods. Underground storage tanks of natural gas were totally exhausted (consumption was 350 million cubic meters higher than in a comparable period last year), supplies of solid fuels declined in midyear by 1.4 million tons, and supplies of heating oil and motor fuels were also substantially lower. Our situation was further complicated by an unusually cold fall, which again necessitated a higher consumption of all fuel and energy resources; for example, it was necessary to pump as early as October 100 million cubic meters of natural gas from underground reservoirs, whereas during the same time in 1984 we were still storing in the underground reservoirs some surpluses.

During its discussions in November of last year, the Central Committee of the Czechoslovak Communist Party appreciated the fact that the arrangements for the winter period were given greater attention and that departments of fuel and energy, as well as the machine tool industry, took a generally responsible approach particularly to the overhauling and checking of mining, energy and gas equipment.

The overruns of coal production and electric power in nuclear plants were a crucially positive feature of last year. The production of coal reached almost 127 million tons, which is over 1 million tons more than that required by the state plan, and the production of electricity in nuclear plants was exceeded by 1.3 billion kWh, altogether then by more than 2 billion kWh. These results attest to the fact that we successfully managed the highly demanding program of building the nuclear plants, where after initial difficulties we put into operation three units; in the fourth one, start-up work has begun.

This enabled us--even given the lower production in the steam power plants--to balance out the sharp decline in the supplies of solid fuels in the first quarter; by the end of October we had already reached the supply level of last year, which was the highest in history. By expanding the coal yards at power plants it became possible to stock 300,000 tons more coal than in 1984 and thus create conditions for a continuous, smoothly-running production during the winter season. However, not all wholesale buyers took advantage of the opportunity for full advance supplies during summer, although conditions for that existed in the mines. Thus supplies are spread out unevenly, which could create some local problems during the course of the winter. It is necessary to learn an important lesson from this: in enterprises always create conditions which will allow for purchasing coal during spring and summer, when the conditions not only for mining but also for transportation are optimal.

This applies fully also for advance supplying of the coal warehouses, where, however, a substantially more complicated situation exists. In the first quarter, sales higher by roughly 11 percent caused a midyear decline of supplies by almost 700,000 tons; their level did not reach even half of what it was in 1984. Extraordinary measures were therefore adopted for the operation of our mines, aimed at compensating for this decline by an increased production of graded coal, which, thanks to the initiative of our miners, is succeeding. But in spite of that, there have been isolated cases of local problems in distribution; a share of responsibility for that is born by some of the coal warehouses and national committees, which did not pay enough attention to the proper distribution and sales of coal with a greater concern for the benefit of the public. But it also happened because, as a consequence of a rather cold fall, the sales grew disproportionately and in the middle of December were already 950,000 tons higher than in the same period in 1984.

In the interdepartmental discussions at the end of the year, measures were adopted to prevent break downs in supplies of graded coal. They concern mainly the management of sales, including advance deliveries, so that all applicants could be served. We were able to make certain that the public is supplied with coal in the required amount, but it is not always possible to achieve this by a single large delivery. Another measure concerns the operational regulation of coal deliveries to regions and districts with a low level of supplies, and additional production during the Christmas and New year holidays in both of the Krusne Hory mining districts. In the Norther Bohemian brown coal districts the miners of the surface mines CS Armada, Jan Sverma and Lom Most, where coal suitable for grading is mined, worked, together with workers of the Coal Preparation Plant Komorany and Herkules, even on Christmas Eve and New Year's Eve. Just during the Christmas holidays almost 500,000 tons over and above the state plan were mined. That made it possible to

exceed deliveries for the coal preparation plants by roughly 1 million tons, which should be enough to fully satisfy demand. Priority transportation of coal was provided by the railroads.

These very effective measures, however, have to be accepted by all wholesale buyers of graded coal, and in accordance with long-term plans, they have to gradually modify their equipment for using fuel of lesser quality. Otherwise they will run the risk of not being able to obtain graded coal in future years, because when supplier inventories keep declining, we will always give priority to the requirements of the public, schools, hospitals, etc. The high overruns in deliveries of graded coal in 1985 cannot be repeated, and were achieved to the detriment of mining supplies for this year as well as subsequent years.

Good results were achieved in the gas industry as well. Thanks to continuous deliveries of natural gas from the Soviet Union and to the deliveries being exceeded in volume during the course of the year, we succeeded, in spite of initially unfavorable conditions, in managing and even slightly exceeding the task of loading gas into the underground storage reservoirs, from which we can, in case of extreme winter weather, draw more than 30 million cubic meters daily. Nevertheless, the supply situation of heating gas is precarious. As a result of higher consumption during the fall months, and thus the necessity for premature drawing from the underground storage reservoirs, we ended 1985 with reserves approximately 200 million cubic meters lower than in the previous year.

A similar situation exists in the case of heating oils and motor fuels, where, toward the end of the year, supplies were also lower, which will cause problems in distribution particularly in the first quarter of this year. Their higher consumption last year--besides the indisputable effect of the colder weather, there was also the higher agricultural production--is rooted in the still inadequately responsible approach to their management. In the area of heating gas and oil as well as motor fuels, here is a need for strict economy measures including maximum utilization, and a search for every technical and organizational means to achieve lower consumption. We do not have the resources to satisfy higher demand, and what was squandered last year, has to be made up by savings this year. Supply complications during the first quarter could be eased also by shifting energy-intensive production to the spring and summer seasons; this should be on the main objective for the winter season.

The tight fuel-energy balance for 1986, stemming mainly from the fact that we will have at our disposal roughly the same amount of primary energy resources as expected for this year (105.1 tons of standard fuel), demands that all sectors of the national economy increase their efforts to use fuel and energy effectively and economically.

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ECONOMY

GERMAN DEMOCRATIC REPUBLIC

FRG STUDY NOTES ENERGY SOURCE, PRODUCTION PROBLEMS

Cologne DEUTSCHLAND ARCHIV in German Vol 18 No 12, Dec 85 (signed to press 25 Nov 85) pp 1320-1326

[Article by Dr Wolfgang Stinglwagner, political staff member in the Gesamtdeutschen Institut in Bonn: "Few Opportunities for Alternative Energy Production--On the Utilization of Non-Fossil and Non-Nuclear Energy Sources in the GDR"]

[Text] It has long been a topic of discussion in the West German public arena that the GDR is a first-rate air polluter. In particular, the extensive use of brown coal for energy purposes and in the industry of the GDR has devastating consequences for the environment. SO<sub>2</sub> emissions alone, which were estimated by the DIW for 1982 at nearly five million tons,<sup>1</sup> are more than five times as high per capita as they are in the FRG. The damage to forests caused by this, as well as the increasing health strains that must be endured by the population of the GDR, can no longer be hushed up. Moreover, agriculturally productive land, forests and settlements forced to give way to open-cast brown coal mining are to an increasing extent being transformed into lunar landscapes. It is precisely the environmental strains associated with the use of fossil fuels that in Western countries has led to an intensified emphasis on so-called alternative--or renewable--sources of energy. It is true that experience in recent years with solar energy, wind, biomass and other renewable sources of energy shows that they can be expected to make, at least in the medium term, only very limited contributions to the supplying of energy. And yet, they have clearly achieved regional significance. Extensive research and development projects are being carried out in order to expand their future utilization.

To the GDR economy, shaken by damage to the environment and the scarcity of raw materials and foreign currency, the utilization of renewable sources of energy should be at least as interesting as it is to the Western industrial countries. Thus, what is happening in this area?

1. A Regenerative Energy Source With Tradition: Water Power

The natural hydroelectric potential of the GDR is meager. Precipitation and geological conditions rule out making hydroelectric power into an important mainstay of electroenergy production or of primary energy exploitation. Most

of the falling water power plants found on rivers are small and have at their disposal less than one megawatt of installed potential output. Most of these falling water power plants are in the southern districts of Karl-Marx-Stadt, Gera, Erfurt and Suhl. In all, the more than 200 falling water power plants in the GDR are installed with electricity generators with a capacity of approximately 170 megawatts.<sup>2</sup>

Considerably more significant than the falling water power plants are the GDR's pumping plants and reservoirs. They are of such great importance to the electricity supply because in peak periods of electricity consumption, they use the water kept in elevated reservoirs to generate electricity and feed this into the power supply system, while at times of low electricity consumption they take away the electricity not needed by the electrical combine, which is generated in the large, base load power plants operated on brown coal, and with this energy pump water back into the upper holding pools.

Today, the installed capacity of pumping plants and reservoirs amounts to nearly 1,700 megawatts. Their share of the installed capacity of all hydroelectric power plants in the GDR comes to 90 percent. Thus, pumping plants and reservoirs in the GDR are of considerably greater importance than, for example, in the FRG. Here the share of reservoir and pumping stations amounts to less than 60 percent of the total hydroelectric capacity. Since the pumping plants and reservoirs do not provide any original generated electricity on their own, but in their end effect merely cover peak consumption and enable brown coal power plants to be better used to full capacity, they make--apart from regional environmental effects--no direct contribution in the sense of a renewable energy producer. In this sense, only the falling water power plants produce "clean" electricity.

In view of the sharp increase in energy prices in recent years, thought is being given in the GDR--just as in most West European countries--to putting closed-down falling water power plants into operation and building new small ones in order to exploit the available reserves of river courses with slight gradients for regional power supplies. The turbines and generators necessary for this are to be manufactured in the CSSR, Romania and Hungary within the framework of the CEMA cooperative agreement. However, this is not expected to bring about a significant expansion in the energy supply.

## 2. Solar Energy

Apparently impressed by the international debate on energy policy, the GDR has since the end of the 1970s intensified its examination of the possibilities for exploiting other renewable energy sources. However, expectations are narrowly limited by the prevailing climatic conditions in the GDR and well as throughout the entire Central European region, as is the case with the exploitation of solar energy.

It is estimated that on the average, the GDR experiences each year 37 days of sunshine, 240 days of partial cloudiness and 85 days of completely overcast skies. The annual duration of sunshine is estimated to be a total of 1,600 to just over 2,000 hours. Problems arise in part because the smallest amount of

seasonal sunshine takes place in winter, when energy for heating is needed in particularly large quantities.

In the meantime, various experimental facilities for the direct and indirect application of solar energy have been put into operation. Several examples should be mentioned here. In the development of heat pumps, it was possible in the GDR to draw from experiences that have been gathered for some 50 years at the Technical Institute of Dresden. At the beginning of the 1970s, the first heat pump in the GDR designed for home heating purposes was developed there. However, the first successful application-oriented experiment was not until 1977, with the construction of the "Harz Block House" test facility; in this, floor heating was provided by a heat pump and warm water was prepared with the help of solar collectors and an supplementary electric heater.

At the 1981 Leipzig Spring Trade Fair, there was for the first time a presentation by a GDR company--the Air and Refrigeration Technology VEB Combine--of an assortment of heat pumps. In the meantime, solar collectors are being manufactured by the Dessau VEB Light Metal Construction.

In May 1978, an open-air swimming pool was opened in Freyburg an der Unstrut which the Halle Rationalization VEB equipped with approximately 200 square meters of solar collectors and a heat pump, with the help of which the water is heated. In this way, it was possible to extend the bathing season by 1 month. At a similar facility in Klein-Machnow (Postdam district), warm water showers and heating have been provided by water pumps since 1982, whereby the amortization period for these investments is estimated as being in the range of 13 to 17 years.

Building on the experiences gained from the Freyburg prototype facility, a second, larger solar installation was built in Taubenheim an der Spree to warm up water in a swimming pool.<sup>3</sup> It went into operation in 1984 and is equipped with 360 solar collectors requiring an area of 285 square meters. The facility is in use from May to September. Because of the expense, however, no water treatment facility was installed. The necessary fresh water is taken from springs found away from the site of the swimming pool, while the warmed bathing water "...is diverted into a natural body of water" after use.<sup>4</sup> Thus, even the operation of this solar installation is associated with damage to the environment.

This example verifies that the development of installations of this kind is subject to strong financial restrictions in the GDR as well. The cost of the system of collectors was estimated at 900 to 1,100 marks per square meter of collector surface. Because of this, according to a GDR expert in his report on the project, "...large-scale thermal exploitation of solar energy for the treatment of low-grade heat under Central European conditions--even for the potential aspect of substituting for high-grade energy producers--[is] not economically tenable."<sup>5</sup>

On the initiative of the Economic Council of the Halle district, a solar housing estate was built in the period from 1978 to 1980 in the Moetzlich section of Halle. Utilizing solar collectors, heat pumps, reservoir systems, low-grade heating and thermal insulation, it was possible to reduce energy



consumption in the single-family houses built there by an average of 75 percent compared to conventional single-family houses. In view of the required investments, whereby for example expenditures for the utilization of a heat pump are five to seven times higher, based on GDR prices, as compared to a nighttime reservoir electric heating system, the ensuing results were less favorable with respect to economic feasibility.

Nevertheless, the number of relevant projects is currently on the rise. The development of heat pumps in particular is being pushed ahead even further. Thus, for example, bivalent heat pumps have been developed that remove heat from the outside air and--depending on the required heat output--heat houses alone or in conjunction with conventional heating systems.<sup>6</sup> However, in using this system, there have arisen largely GDR-specific problems that can be attributed to the fact that the majority of the home heating systems there are not operated with heating oil or natural gas, but rather with brown coal. With corresponding shifts in the temperature of the outside air, small bivalent heat pumps with a heat output of 12 kilowatts make it necessary for the conventional heating system to shut off and on frequently. However, since coal boilers cannot be started up and stopped with nearly the same amount of flexibility as other conventional heating systems, the utilization of small bivalent heat pumps for home heating in the GDR has not been a success.<sup>7</sup>

In contrast, the utilization of large heat pumps for primarily commercial purposes has yielded better results. The first prototype installations in the GDR went into operation in 1978 at the Sangerhausen Brewery and at the Experimental Building Division of the Dresden Air and Refrigeration Technology VEB Combine.<sup>8</sup> Other large heat pumps with an output of over 200 kilowatts each include those installed in an accumulator plant in Taubenheim and in a freshwater fishery in Grossdrebnitz. On 13 August 1981, the GDR Council of Ministers made a decision on the basis of which the series production of heat pumps was definitively begun. After some 50 heat pumps with a heating capacity of approximately 200 kilowatts each had come into use in 1981, this number was increased to 115 systems in 1982.<sup>9</sup> In the meantime, heat pumps are coming into greater use in agricultural operations in the GDR. One important producer is the Halle Machine Factory VEB, which belongs to the Air and Refrigeration Technology Combine, and which has included an entire assortment of heat pumps in its production program. The spectrum of output of the varieties available in the GDR runs from 12 kilowatts to 2,850 kilowatts.

In contrast, progress in research and development efforts on exploiting solar energy using solar cells is considerably slower. Possibilities for the application of solar cells, through which sunlight can be converted directly into electrical energy, are seen in the GDR "...only for smaller installations under especially favorable circumstances and for hobby purposes..." Apparently, the GDR is not engaged in any noteworthy developmental projects in this realm. Admittedly, it hardly differs in this--as far as the exploitation of photovoltaic power sources is concerned--from the other Central European countries in both East and West. In view of the relatively meager amount of radiation by the sun and the low degree of effectiveness of solar cells, solar cell technology is at the moment seen as still being too expensive for application in moderate climatic zones.

### 3. Wind Power and Other Regenerative Energy Sources

Reports on the first experimental installations for the exploitation of wind energy have appeared in the GDR media. Thus, for example, a wind energy installation is in operation on the Baltic Sea island of Hiddensee. The wind propeller with adjustable blades, which is mounted on a 23-meter high steel mast, generates up to 20 kilowatts by way of a generator. The power produced is used to heat a building in which an institute of the Academy of Sciences is located.

Other wind energy installations are being set up for agricultural irrigation projects. On the whole, however, there are no large-scale hopes for the future associated with this type of energy supply in the GDR. The potential contribution of wind energy to the total generation of the GDR in the year 2000 is estimated at a maximum of 0.4 percent. By the end of 1985, no more than 100 wind energy installations--mostly in the northern districts--will be in operation.

Another energy source that is being examined in the GDR for its usefulness is geothermal energy. Its exploitation in the southern districts of the GDR is viewed as technologically possible, although not (yet) economically sensible, since the hot rocks there are found at a depth of 3,000 to 4,000 meters. In contrast, the extraction of geothermal water at 70 to 80 degrees Celsius from a depth of only 2,000 meters in the north is already being deemed worthwhile. There is housing in Waren an der Mueritz that is heated with geothermal water. Geothermal energy is to be utilized, with the help of an experimental installation, in a new housing area with some 900 apartments near Neubrandenburg. There are plans for two drillings extending to a depth of approximately 4,500 meters. Hot water is to be removed through the first drill hole, while the second hole, which will be some 100 to 200 meters away, will be where the used and cooled water will be forced back into the earth. From 50 such installations, each with an annual output of 25 gigawatt hours, the contribution of geothermal energy to the total GDR energy supply is estimated for the year 2000 to be in the neighborhood of 0.1 percent.

There are no noteworthy prospects for the application of biomass--that is, plant cultures from which fuels such as alcohol or oil can be recovered--for energy purposes in the GDR for lack of corresponding cultivable land and for climatic reasons. In contrast, there exist facilities that are testing the energy exploitation of biogas, which can be recovered from sewage plants and animal waste products. For example, a livestock breeding enterprise at Nordhausen is producing up to 14,000 cubic meters of biogas daily from liquid pig manure and through this is reportedly saving 2,800 tons of heating oil per year. In sewage plants in some cities--including Berlin, Erfurt and Dresden--biogas is gathered in large garbage containers and used for heating and other purposes.

### 4. Scepticism Towards "Alternative" Energy Sources

On the whole, the economic leadership and energy experts in the GDR provide a very sceptical assessment of the exploitation potential of renewable energy sources. In this sense, they reject the concept of "alternative energy

sources" even more decidedly than many of their Western colleagues. The expected contribution of nonfossil and nonnuclear sources of energy to the primary energy supply are estimated by GDR energy planners for the year 2000 at scarcely more than one percent, whereby heat pumps, solar collectors and wind energy installations in particular are to be utilized.

Furthermore, the fact that the existing potential for utilization--for example, the application of solar collectors and heat pumps--was not pursued until late has not exactly had a favorable effect. Thus, because of the delay in starting production in the GDR, the number of heat pumps in use is considerably smaller than in, for example, the FRG--which is hardly in a better climatic situation--where the number of electric heat pumps alone was estimated in 1982 at almost 40,000. In addition, there has thus far been scarcely any attention given in the GDR to possibilities that, despite a lack of domestic application potential--as is the case with solar cells, for example--could be suitable for export through development and production, as they are perceived by companies in the FRG.

Even within CEMA, the GDR takes an especially sceptical position towards the utilization potential of renewable energy sources. For the entire CEMA area, the relevant planners count on at least a 10 percent share of the primary energy supply being provided by these energy sources by the turn of the century. The long-term energy program of the USSR provides for a clear push forward in research and development in this area before 1990.<sup>10</sup>

Nothing, however, has been announced thus far concerning noteworthy participation by GDR industry in the development work.

#### 5. No Alternative to Extensive Brown Coal Use?

There would be two conceivable ways to limit or even reduce the middle-range use of brown coal, which is becoming increasingly expensive in both economic and ecological terms, in the GDR. First of all, there could be greater reliance on other primary energy sources. But since the consumption of oil--already drastically reduced--is to be cut even further and the share of natural gas is to be increased only slightly, the expansion of nuclear power capacity is subject to serious delays and renewable primary energy supplies are viewed with scepticism, this option is inapplicable.

Secondly, total primary energy consumption could be reduced. The GDR would in fact have reason enough for this. Specifically, the GDR has for years had a volume of consumption of primary energy that--measured per capita--overshadows the hunger for energy of all industrial nations with the exception of the United States and Canada. At 210 gigajoules, the annual per capita consumption of primary energy in the GDR has since the beginning of the 1980s exceeded the primary energy consumption level of the FRG, which is itself not exactly low, by 15 to 20 percent. In 1984, per capita consumption rose as high as 216 gigajoules, even though industry had slightly reduced its delivered energy consumption since 1980 despite a rise in production.<sup>11</sup>

All the causes of this development cannot be mentioned here. One important reason, however, can be attributed to the fact that brown coal is a relatively

inferior primary energy source with a low heat value. In extracting it from open-cast mines, in transporting it and in converting it into the forms needed by industry and private consumers (for example, electroenergy, municipal gas, briquettes, coke), there are greater losses of energy (for example, in the form of transportation energy or unused waste heat) than in the utilization of other sources of primary energy.

Significant investments and extensive technological expenditures are necessary in order to reduce these losses and to hold primary energy needs in check through an increase in the efficiency of energy technology, without cutting back on the supply of delivered energy to the economy and the population and without endangering economic growth.

However, there has thus far only been one area of brown coal use in which the GDR has had convincing success. An extensive district heating system was set up that supplies heat to many houses, commercial consumers and state consumers. For the GDR, this heat network practically represents an "alternative" or renewable energy source, since a considerable part of the heat fed into the system of pipes does not have to be generated separately, but can be recovered from waste heat that up to now has gone unused. In the large brown coal-fuelled power plants in the GDR, equipment has been and is being installed that makes it possible to remove steam while feeding into the district heating system, within the framework of the power-heat connection, with no interruption in the generation of power. Through this, the efficiency of fuel utilization in the power plants will improve considerably. The utilization of waste heat from industrial ovens has also meant that with no change in fuel use, a significant number of heating mechanisms are dropped or that it is possible to save in the new construction of district heating networks.

There are, for example, large greenhouse facilities attached to the power plant in Vockerode an der Elbe, which are heated with heat from the power plant and in which considerable amounts of vegetables are produced. The steel plant in Brandenburg provides thousands of homes with heat which is taken from the industrial ovens as waste heat. The city of Cottbus gets heat from the Jaenschwalde brown coal power plant, while Greifswald is supplied with heat by the Nord nuclear power plant. In all, over 1.3 million homes in the GDR (approximately 20 percent of all housing) are connected to a district heating network--a considerably larger number than in the FRG, for example (approximately 8 percent).

These steps, which in their area of application have undoubtedly facilitated an improvement in delivered energy supplies without a change in the use of fossil and nuclear fuels, have indeed had a greater effect on the energy balance than have the utilization of renewable energy sources. Nevertheless, even district heating cannot be expected to provide the decisive breakthrough towards an economically and ecologically acceptable energy supply in the GDR. In 1984, the 296 million tons of raw brown coal that had to be mined in order to supply industry, the government and the population of the GDR with energy was considerably more than had been allowed for in the annual national economic plan (283 million tons). By 1990, annual brown coal production should not be increased to 300 million tons, as was originally planned, but to

at least 315 million tons, while by the turn of the century the figure will be approximately 320 million tons.<sup>12</sup>

It is true that a large part of the growth in output is not planned for the purposes of energy, but rather as a raw material for coal chemistry. Nevertheless, it can be expected that the expenditure of primary energy will also have to be increased in the years ahead in order to not endanger the pursued rates of growth in the national income. The GDR pays this price for the decision to cover nearly three-fourths of its expenditures on primary energy with its own brown coal, despite the correspondingly elevated losses in conversion and transference.

The last word on the utilization of renewable energy sources in the GDR has admittedly not yet been spoken. The possibility cannot be excluded that the economic leadership will, in view of the rising economic and ecological costs of brown coal use, decide after all to support renewable energy sources to a greater extent than has thus far been the case. It is possible that additional incentives for the development of "alternative" energy technology will come from the USSR, which is pursuing extensive plans in this area and has always regarded the GDR as an interesting partner in the development of new technologies. For the moment, however, there are no concrete clues that this is happening.

#### FOOTNOTES

1. Compare Jochen Bethkenhagen, Doris Cornelsen, Rainer Hopf, Manfred Melzer, Cord Schwartau, eds., "Luftverunreinigungen in der DDR: Die Emission von Schwefeldioxid und Stickoxiden" [Air Pollution in the GDR: Sulphur Dioxide and Nitric Oxide Emissions], DIW-WOCHENBERICHT, No 30/85, 25 July 1985, pp 337-346; compare also Cord Schwartau, "Die Entwicklung der Umwelt in der DDR: Neue Probleme durch Renaissance der Braunkohle" [The Development of the Environment in the GDR: New Problems From the Renaissance of Brown Coal], from "Umweltprobleme und Umweltbewusstsein in der DDR" [Environmental Problems and Environmental Awareness in the GDR], Redaktion Deutschland Archiv, Cologne, 1985, pp 9-38.
2. Compare Wolfgang Stinglwagner, "Genuegend Energie fuer die Zukunft?" [Enough Energy for the Future?], DEUTSCHLAND ARCHIV, No 3, 1983, pp 262-272.
3. Compare Achim Trogisch, "Die zweite Solar-Kollektor-Prototypanlage im Schwimmbad Taubenheim (Spree)--Erfahrungen mit dem Betrieb von Solar-Kollektor-Anlagen" [The Second Solar Collector Prototype Installation in the Taubenheim (Spree) Swimming Pool: Experiences with the Operation of Solar Collector Installations], STADT- UND GEBAEUDETECHNIK, No 5, 1985, pp 65 f.
4. Ibid., p 66.
5. Ibid.

6. Compare Ivan Boschnakow et al, "Kesselwaermepumpe nach dem Absorptionsprinzip" [Boiler Heat Pump Based on the Absorption Principle], STADT- UND GEBAEUDETECHNIK, No 5, 1985, pp 67 f.
7. Compare Guenter Heinrich, "Anlagen mit Waermepumpen fuer die Waermeversorgung in Rekonstruktionsgebieten" [Installations with Heat Pumps for Heating Supply in Reconstruction Areas], ENERGIEANWENDUNG, No 2, 1985, pp 56-61.
8. Compare W. Nestler, F. Schneider, "Erfahrungen mit Waermepumpenanlagen" [Experiences with Heat Pump Installations], LUFT- UND KAELTETECHNIK, No 4, 1984, pp 200-202.
9. Ibid., p 200.
10. Compare Bundesstelle fuer Aussenhandelsinformationen, ed., "UdSSR investiert in erneuerbare Energiequellen" [USSR Invests in Renewable Energy Sources], NACHRICHTEN FUER AUSSENHANDEL, 28 January 1985, p 1.
11. Calculated from the "Statistisches Jahrbuch der GDR 1985, pp 56 f.
12. Compare Klaus Strzodka, "Braunkohlenbergbau und Umwelt" [Brown Coal Mining and the Environment], URANIA, No 6, 1985, pp 12-17. According to other reports, the extraction of raw coal should rise even as high as 320-325 million tons by 1990. Compare "Luftverunreinigung in der GDR," op. cit., p 346.

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ECONOMY

POLAND

# CONSUMER GOODS IMPORTS FROM CHINA, BLOC COUNTRIES TO INCREASE

Warsaw RZECZPOSPOLITA in Polish 27 Jan 86 pp 1, 5

[Article: "Imports Will Ease Market Shortages"]

[Text] Last year a number of much sought after goods from China appeared in the stores. As we learned in the Association of Domestic Retail Enterprises, retail stores expect further, larger shipments in the near future.

Ships with goods contracted last year have as yet to arrive. Among the goods are towels, clothing, cloth, and leather goods. Wild cat, god, and llama furs should shortly appear in the stores; we have imported the skins, and coats are being made from them in the Krakow furrier shops. On the whole there will be significantly more goods from China on the market this year than in 1985. A number of new agreements (among them for underclothing, cloth, and clothes) have been signed.

The imported articles from China and other imports will be a significant contribution to the market, especially adding variety. In many sections of the industrial market, the prospects are unfortunately not bright. From the announcements of producers, it appears that there will not be more coats and outerwear than last year, when the situation was not good.

Therefore the retail enterprises, which have compensatory exchange agreements with various foreign firms, have decided to seek these types of goods. Besides down jackets from China, there will be jackets and lined coats from Yugoslavia (a \$3 million contract in exchange for dyes), and coats from Austria. We also expect clothes from Hungary and leather accessories and pants from the People's Republic of Korea.

Thanks to increased imports from the USSR this year there will be more automatic washers for sale (domestic supplies will be the same as last year). Furniture from the GDR and Hungary should ease the continuing shortages.

Purchases of some outdoor and camping goods should improve supplies in this area. Domestic production, which is down for various reasons, is still far from satisfying demand. For example, there will be 170,000 air mattresses (70,000 imported) and 230,000 sleeping bags (70,000 imported from the GDR among other countries). Chinese ski gloves will also be available; there have not been any of them for several years.

According to the Central Annual Plan there will be a 10 percent increase in goods imported from socialist countries. Our balance of payments, however, will require limitation of imports from the West. Fortunately, retail enterprises are taking advantage of the improved market and exchanging goods in sufficient supply for those we need the most.

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ECONOMY

POLAND

#### REFORM COMMISSION DISCUSSES MATERIALS MANAGEMENT

Warsaw ZYCIE WARSZAWY in Polish 14 January 86 pp 1, 2

[Article: "What Influences Results in Practice: Economic Reform Commission Renews Its Activity"]

[Text] The second working group of the Economic Reform Commission has set again after a long break.

A few days ago a special group evaluated the crafts industry, and on 13 January 1986 the seventh working group on turnover and materials management, chaired by Czeslaw Skowronka, began to evaluate the document prepared by the commission staff. The document is entitled "The Implementation of the Directions of the Economic Reform Prepared by the Economic Reform Commission Adopted by the Ninth Extraordinary Congress of the PZPR and Approved by the Sejm of the PRL."

This document is to be discussed by the different groups before the Economic Reform Commission meets in plenary session at the end of January and the beginning of February. Thus, without much publicity this commission is renewing its activity which until now the sitting premier has chaired and which also represented society's control over the development of the reform and its implementation.

The meeting of the seventh working group discussed the critical problem of materials management, including efficiency. As is known, the situation in this area, including the rules of the game, affects the overall systemic measures. Disequilibrium and the tendency to retain controls connected with it affect the measures used in practice (termed temporary but the system has endured now for years).

The document, rather the proposal, prepared by the staff of the Economic Reform Commission has been subjected to penetrating analysis, even sharp criticism. It was agreed that in the matters of direct interest to the group and in others, the evaluation of the implementation of the economic reform document is a formality. Thus, the opinion that it is insufficient to compare the document developed 4 years ago with the legal regulations and rules of the game. Rather, the efficiency of management should be

thoroughly analyzed. Simultaneously, we should examine what produces this unsatisfactory situation. To what degree is it a result of the new more difficult conditions that years ago could not have been foreseen? To what degree has the failure to implement many proposed measures contributed to this situation? To what degree should we implement new rules of the game appropriate to the new conditions and needs?

Although the question of the efficiency of use, including a materials management policy, dominated discussion, the current state of the material supply system was also discussed. The situation in the producer-goods market and shortages are the chief causes for limiting the freedom in material turnover. There are, however, other causes that need detailed analysis.

In its initial proposals the seventh group presented its observation on the proposals which, given the preCongress discussion, can have great significance for the further development of the system design and the fate of the reform. The general evaluation of the reform in this area, however, will be contained in the report on materials turnover and management in preparation. The group decided, as usual, to vary from the established patterns and to present a more detailed opinion on the situation including the emerging trends and needed changes.

It should be added that the initial evaluation shows that economic instruments have been used insufficiently to improve materials and energy management and to control supply. This is due in part to the market situation, but it is also results from insufficiently consistent practice in this area.

The discussion exposed two points of view. The representatives of enterprises expressed one: the enterprises find it increasingly difficult to comply with the severer, inconsistent rules of the game. Representatives of the sciences, administrative institutions, and banks expressed the other. As usual the final opinion results from the truths in each of the different points of view. This permits us to confront theory with practice and the intentions of the authors of the proposed measures with their practical consequences.

The fact that the working groups of the Economic Reform Commission have renewed their activity is good news regardless of their influence on economic practice.

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ECONOMY

POLAND

## REGIONAL INCREASE IN TRADE WITH USSR SOUGHT

Warsaw RZECZPOSPOLITA in Polish 24 Jan 86 pp 3, 5

[Article by Bozena Papiernik: "New Offers Sought: Trade Contacts"; passages in slantlines rendered in boldface in text]

/The Kujaw-Pomeranian region has for years exported to the Soviet market. Practically speaking, all the important industrial enterprises in the region export to the USSR, and last year the products of the 82 factories constituted 27 percent of the local shipments to foreign markets. Moreover, the structure of the region's exports to the USSR is favorable, approaching that desired between the two countries during the current 5-year plan. Almost two-thirds of the trade (64 percent) consists of machines, equipment, and electro-mechanical products, and these products have high levels of value-added and are highly desired and profitable./

The drive to increase the quantity of modern finished products and machines in Polish exports is also required by the economic need to continue the tradition of trade with the USSR, which constitutes two-thirds of the shipments of fuels, raw materials, supplies, and machinery for heavy industry to Poland. Most importantly, Poland enters the current 5-year period with a negative balance of trade and facing the difficult task of balancing trade deficits dating from 1978.

/These essential truths and needs were emphasized with the appropriate force by Jerzy Szopa, chairman of the Polish Chamber of Foreign Trade, and by Jadwiga Wilk, director of the Bydgoszcz section of the chamber, during a recent meeting with the export enterprises of the Bydgoszcz region./ During the meeting the discussion touched on equalizing the value of trade, making Poland's assortment of goods more varied, and increasing the quality, and developing specialization and cooperation between factories of the two countries (they are to increase from 15 percent to 20 percent of the value of trade by 1990). These problems outline the tasks that the exporters and the foreign trade services and agents face. Poland, as the debtor, must be particularly active. Further, the projected volume of trade is open, as Chairman J. Szopa emphasized; thus, the expansion of exports to the USSR is greatly desired.

## Proposals and Accomplishments

/The meeting, although it did not exhaustively discuss Polish-Soviet trade relations, did cover the problems involved and contributed to outlining the prospects for the near future. The outlook is promising, although intensifying trade, giving it a new qualitative dimension, and increasing cooperation and specialization will be difficult./

Proposals aimed at increasing exports were the main motive behind the speeches at the meeting. Proposals were made by enterprises long active in Polish-Soviet trade or desiring to increase their prestige in the Soviet market and by enterprises wishing to begin exporting to the Soviet market. Everyone observed that the Soviet market is very large and offers Polish exporters great opportunities. But this market makes its own special demands as all markets do, and these demands are becoming stiffer following the world trend in foreign trade.

Of the enterprises in the first group those known and recognized in the Soviet Union, the Telkom-Telfa Electronics Plant in Bydgoszcz and the Pomeranian Ema-Apator Electrical Apparatus Factory in Torun deserve special mention. As Henryk Bakowski, director of Telfa (a producer of modern equipment among whose exports rapid communication equipment predominates) anticipates doubling its exports to the USSR in 1986, although the volume was significant last year (34 million), and he also anticipates exporting new improved products this year. In 1986 Ema-Apator, which expands its offers every year, will export to the USSR, among other items, computer-controlled lathe drives that meet the highest world standards.

/These are only selected, exemplary cases. The complete list of export proposals was broad, and it was passed on to the appropriate special commissions of the CEMA or at the meeting. We could multiply these examples of developing, close cooperation between factories of the Kujaw-Pomeranian region and the Cherkasskiy and Mohylerskiy districts of the Soviet Union./ Business is business, and interests are decisive. But, as Henryk Ziolkowski, first secretary of the Bydgoszcz Foton factory committee observed, we must remember that Polish-Soviet economic and trade relations are part of a larger political, ideological whole that includes all areas of life.

/Representatives of the enterprises at the meeting also emphasized that they had been convinced that one recognizes his true friends in poverty. In many cases Soviet aid--raw materials, supplies, money--significantly contributed to our rising out of the hole into which our enterprises had sunk a couple of years ago./ Ivan Tkachenko, Soviet consul general in Gdansk, expressed support for closer direct cooperation between the factories of the two countries and assured his listeners that the proposals will be examined thoroughly by the Soviet side.

## Surmounting Barriers and Difficulties

Against the background of closer trade contacts between the two countries, sketched at the meeting, the difficulties and barriers that loom ahead in implementing the contacts appear more clearly.

The difficulties are of different kinds and sizes. A large number of them is strictly domestic and derives from the recently modified economic reform measures. /The need to intensify exports and to accelerate technological and scientific progress was one of the main reasons for correcting them./ Measures that stimulate exports, especially for new instruments such as the ruble retained-earning accounts, which is very important for trade with the USSR received unequivocal support at the meeting. Given that the new instruments have not had time to prove themselves, the frequently asking whether they will suffice for stimulating exports is understandable. People at the meeting also asked whether the new, general systemic stimulations of technical progress will be strong enough. Raising the level of export products frequently requires modernizing the machine park, improving the supply of spare parts and subassemblies, etc.

The word supply brings out another barrier. The representative of Mostostal, which recently has developed its exports to the USSR rapidly, was particularly critical: The export assortment (which consists mostly of parts warehouses) could be broadened to include new types of buildings, storage facilities, automobile containers; but we cannot ignore the risk that our partner will terminate contracts because of delays in completion. Last year these delays were caused by late deliveries by Mostostal's subcontractors for steel, welding wire, and metal parts. Mostostal suggested allowing the use of convertible-currency and ruble retained earnings to purchase the needed materials in the domestic market. This would mean legalizing so-called domestic exports.

The exporters face other problems that need solutions. The representative of the Wloclawskie Table Ceramics Factories noted delays in shipping and shortages of containers needed for exports' representatives of Em-Apator also spoke of serious shipping delays. Attention also was drawn to bureaucratic contract negotiations that take inordinate quantities of time.

/The meeting of exporting enterprises of the Kujaw-Pomeranian region demonstrated that there are great opportunities for expanding mutually beneficial cooperation between production units in Poland and the USSR. The results, however, of the meeting also apply beyond the boundaries of one region./

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ECONOMY

POLAND

PTE CHAIRMAN SADOWSKI ON ECONOMISTS' ROLE IN REFORM

Warsaw RZECZPOSPOLITA in Polish 18-19 Jan 86 p 3

[Interview with Prof. Zdzislaw Sadowski, president of the Main Administration of the Polish Economic Society, by Ada Kostrz: "The Reform Day-to-Day"]

[Text] [Question] Recently, Wojciech Jaruzelski, first secretary of the PZPR, met with the new officers of the Polish Economic Society. Professor, which of the society's program plans were discussed during this meeting?

[Answer] The main program plans are based on the congress resolution. It clearly indicates that the society, as the organization of Polish economists, regards its main statutory function of helping develop the country's economy as fundamental. Performing this function today, we believe, primarily lies in promoting continuing, systematic implementation of the economic reform. This was reflected in our conversation with the PZPR First Secretary.

Economic reform is the path to a healthy economy. It is not a magic formula. It is the insistent restructuring of the entire economy, to ensure its effectiveness and dynamism. Thus, the reform is the basic element in the development strategy and must be tightly coordinated with the intended transformation; it must promote their implementation. Ensuring this connection on a day-to-day basis is not easy. It requires not only appropriate systemic measures but supporting them with economic-policy decisions and the constant effort of all the units. For example, we know that one of the chief directions of change in the economic structures must be lower energy requirements or overcoming the energy barriers by slowing the growth in the demand for energy. In practice, to achieve this goal we must use not only systemic measures but price policy, investment policy, organizational arrangements and everything needed to make energy conservation profitable on a small and a large scale.

The society's fundamental form of activity must rely more broadly on our basic organizational units, the factory circles. There are now more than 2,000 of them, and their role and activities in the workplace vary greatly. Some function well; they genuinely contribute something essential to their enterprises and factories through their professional expertise. Such circles are respected and have authority. We must encourage the factory circles to develop in this direction. This is the proper path for giving the economists' important goal of genuinely increasing esteem for their profession authority. To achieve this goal, we must first show that we are necessary.

This is also connected to influencing society's economic consciousness more broadly, which is also one of the society's statutory goals. We must disseminate economic knowledge, especially economic culture. Why especially? People must not only have formal knowledge of economic relationships and interconnections, but their minds, attitudes, and behavior must also be impregnated with the principles of efficiency and effective action. This is what I call disseminating economic culture.

These are the major items we discussed during the meeting, and our approach gained much friendly support and understanding.

[Question] The 14th National Congress of the Polish Economic Society, which was held in November 1985, referred to the slogan of the 13th Congress, "The Reform Cannot Fail." Four years later has it lost its significance? Perhaps the economists are only attempting to persuade themselves that they must work more actively for the implementation of the reform?

[Answer] Has it lost its significance? It has not, if we understand it as an expression of a continuing conviction that we must do everything for the reform to succeed. It has, if we take into account that today we have enriched our experience over the last four years and that we know that economic reform is a very complicated process.

We now know that there are many threats and contradictions both in the objective economic sphere and organizationally, as well as in people's daily activities, in their values. We must be sensitive to these threats, recognize them quickly, and find methods for counteracting them. We cannot give in to them; we cannot yield to the impression that every phenomenon or action that conflicts with the reform means the reform is ending. Such events do and will continue to appear, but the process continues and will continue. The society's task is to support the reform and to counteract these threats. Today, this is our realistic comprehension of this slogan, which originally expressed our position with understandable, necessary bravado.

The 14th Congress of the Polish Economic Society created a very favorable impression as regards economists' actions in this process. There is a clear desire to initiate, to create at various levels. Now it is most important to produce visible results as quickly as possible, perhaps not nationally, but regionally, which are all the more important because they apply to concrete things.

[Question] During the meeting with the First Secretary of the PZPR Central Committee, a number of current tasks connected with the economic reform were listed. Among them were opposing conservative attitudes, overcoming obstacles to implementing the reform, joining economic reform with restructuring the economy, and outlining prospects of attractive goals for society. You listed some of these goals earlier. But how can the society contribute to achieving them?

[Answer] All of these issues appear in the society's daily activities. Perhaps I should emphasize one of them: conservative attitudes appear within the society itself. It is a large organization (more than 50,000 members), and naturally they are heterogeneous. It would be surprising if the society expressed only one view. Thus, the first challenge--to develop a common position within our ranks on important issues. Circling every problem from all sides is necessary; no one has a monopoly on wisdom. Every viewpoint should be heard and weighted. At present, we hope to formulate the society's position on various issues of great importance to the economy and to society at large. We expect the Chief Council, as the main advisory body of the society, to play an important role in this formulation. Its position should provide an initial formulation for mobilizing the entire intellectual capacity of the economic society, at the voivodship level and in local and factory circles.

Sketching out prospects . . . This is a task for socioeconomic development planning. There should be a place for improvement in detailed development strategies, something that gives wings to people's imaginations, that incites people to action. This is necessary, although difficult given the complications of the day that are holding the nation's feet to the ground. We must escape from the atmosphere of failure. The limitations are numerous, but they are no greater than ever. A practical economic policy must aim to create conditions for increased entrepreneurship and initiative by economic organizations and units. We cannot strangle this initiative in the name of eliminating skulduggery, speculation, laziness, and thievery. We cannot succumb to the false impression that these types constitute the majority of society.

[Question] Where is there a place here for economists to contribute?

[Answer] They are essential, for this involves proper economic policies on taxes, budgets, prices, the operational conditions for enterprises. We must take the socially necessary and useful profitable and the harmful unprofitable.

[Question] The results of the reform also depend on the state of economic culture and awareness, which, as you indicated earlier, the society realizes. But what is it doing in this area and what about future generations of economists?

[Answer] The society has great experience in education activities and has pursued them for a long time, but its ambitions in this area are still greater. We must distinguish two aspects of this problem: first, professional training for economists. You have quite properly enquired about future economists. During our meeting with the First Secretary of the PZPR Central Committee, we discussed this problem. We indicated that professional training is often inadequate. At present life is ahead of theory. There is a supposed crisis of economics and this view has some merit, for many older threats are no longer real. I was taught, for example, that some goods are free and limitless, water, air; but today this is not true. We are paying increasingly higher prices for access to these goods. This affects numerous elements of theory.



We must include these changes in textbooks, which must be and remain current. This is a concern for institutions of higher learning, schools, and institutes that train economists. We cannot replace them. The society is aware, however, that it must participate in creating and implementing educational programs for economists.

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ECONOMY

POLAND

# MESSNER DISCUSSES CONSUMER GOODS MARKET AT MEETING

Warsaw TRYBUNA LUDU in Polish 8-9 Feb 86 p 1

[Text] On 7 February a meeting of the voivods took place under the direction of Zbigniew Messner, chairman of the Council of Ministers, the subject of which was the situation existing in the consumer goods market during the first quarter and its prognosis for the remaining quarter of the current year.

In accordance with the stipulations stated in the 1986 Central Annual Plan [CPR], emphasis was placed on the necessity for maintaining the positive trends in market supply and removing still existing difficulties. The need to implement, in accordance with the CPR, wage and price policies was also discussed.

Other topics were the absolute necessity for a complete implementation of the savings tasks, better use of energy and the proper development of capital investments, especially in the construction of apartments and health centers, education and in the municipal economy.

Also presented were proposals of the state administrative organs to implement a program to shape citizen attitudes, strengthen society's moral values and counteract the phenomena of pathology and the breaking of laws and principles of social coexistence. The necessity to augment actions to raise the country's sanitary condition also was pointed out.

The group adopted the procedure to consider the suggestion put forward during the election campaign to the Sejm, which was consigned to the state administrative organs. The voivods' task as government representatives in the regions as well as of the enterprises' founding organs was discussed.

Vice Premier Jozef Koziol, Stanislaw Ciosek, director of the socio-legal division of the PZPR's Central Committee, Michal Janiszewski, chief minister of the Office of the Council of Ministers, Minister of Finance Stanislaw Nieckarz and Minister of Domestic Trade and Services Jerzy Jozwiak also participated in the meeting.

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ECONOMY

POLAND

# MARITIME ECONOMY 1983-85 PLAN FULFILLMENT ASSESSED

Warsaw RZECZPOSPOLITA in Polish 12 Feb 86 p 5

[Text] The maritime economy has demonstrated that in 1983-1985, difficult years for the entire country, despite the aging of the merchant marine and fishing fleet (during the period, 64 ships weighing 1,080,000 tons were recalled) and of the port infrastructure and real property in the rebuilding shipyards, it was possible under conditions of economic reform to carry out the 3-year plan's tense actual and economic tasks.

The facts are as follows:

--freight transported by the merchant marine in 1983-85 reached 106 million tons, which exceeded the goals set in the 3-year plan by 3.2 percent;

--transshipments in the port during the period reached 149 million tons, which exceeded the planned goals by 12 percent; also higher than planned were transit goods through the ports (exceeding the 3-year plan by 31 percent);

--deep-sea fishing exceeded the plan by 17 percent, with a harvest of more than 2 million tons; the variety of the fishing structure was also improved, and this during American restrictions against Polish deep-sea fishing; the delivery of fish and fish products to the domestic market has exceeded the plan for the past 3 years by 15 percent; and

--good results were noted in the ship repair industry; high dynamics were particularly evident in the export of repair services, especially for ships from the German Democratic Republic and the Soviet Union.

--fundamental changes also occurred in the tabulation of the state budget. In 1983, there was a negative accounts balance of 2 billion zlotys, while in 1984, ocean-related enterprises already showed a positive accounts balance of 3.5 billion zlotys. The results for 1985 exceeded expectations: the positive balance had increased to 16 billion zlotys.

This information was presented on 11 Feb at the Office of Maritime Economy during a meeting of departmental management with workers from the self-governments in the shipping, port, fishing and processing enterprises as

well as in the shipbuilding yards. The meeting's chairman was Adam Nowotnik, minister-director of the Office of Maritime Economy. The goal of this meeting was to discuss, using the background of results in the 3-year plan and the tasks resulting from assumptions made in the National Socioeconomic Plan [NPSG] for 1986-1990, the problems tied to improvements to efficiency in the management of all branches of the maritime economy. In this area, the workers' self-governments have a large role to play.

The discussion also confirmed this. The chairman of the workers' councils pointed to the need to resolve bravely the disproportions existing in the development of particular elements of the maritime economy, through the need for economic and financial tools to achieve this goal and also mutual support among the enterprises, without resorting to subsidies and bank credits. An example of this type of activity is the effective implementation of a sanitation program by the Polish Baltic Shipping Company, which has rebounded from bankruptcy to become a profitable and hard-currency-earning enterprise. Also indicated in the discussions was the need to improve ferrying activities to end makeshift barracks at the ferry stops. Maybe some form of partnership among several shipping and port enterprises will make progress possible in this matter.

An essential subject of the discussions was the issue tied to the functioning of the workers' self-governments. It was mentioned that the workers' councils did not have enough time to prepare a discussion on the subject of tasks resulting from the 1986 National Annual Plan [CPR] and that executory instructions and detailed rules have not been reaching the enterprises in time.

The chairmen of the workers' councils taking part in the discussions put several problems and doubts to the office, as the founding organ. They praised simultaneously the usefulness of the possibility of directly introducing these issues to the departmental directors.

Noting particular assumptions, Minister Adam Nowotnik called for the continuation of this type of meeting. We are now in the period of preparing the assumptions of the National Socioeconomic Plan for 1986-1990 and many issues have to be discussed. There still exist in the maritime economy many distortions, the need to straighten out the development of particular elements in this economy is undisputable. What to do and which method to use to achieve higher efficiency that has existed up to now in this economy is the main subject of activity and discussion in the next few months.

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ECONOMY

POLAND

## PZPR MINING TALKS IN KATOWICE

### R&D Shortcomings in Coal Industry

Warsaw TRYBUNA LUDU in Polish 12 Feb 86 p 1

[Text] Under the leadership of member of the Central Committee's Political Bureau Jerzy Romanik, the Party Central Committee's Mining Commission met in Katowice.

The subject of the 2-day meeting was an evaluation of the achievements and technological progress in the mining of hard and soft coal, as well as of the achievements and perspectives for scientific-technical cooperation of our mining industry with that of foreign countries.

The staff of coal mining's science research and initiation has a large and solid share in the development of our national industry, which does not mean that this activity is free from insufficiencies or imperfections. It has become known, for example, about the small novelty of some innovations, delays in resolving problems such as air conditioning and new techniques to break down the coal or to automate the walls. The efficiency of problem solving does not always satisfy because research frequently goes one way and practice goes another.

In spite of everything, can this activity be improved? How? What gets in the way and what impedes the development of progress? For these and other questions, the members of the Central Committee's Mining Commission looked for answers through direct discussions with management and workers in the science research and initiation staff, visiting them during the first day (11 February) at the Main Institute of Mining and Mining Automatization "Emag" in Katowice and at the Center of Mining Mechanization "Komag" in Gliwice in order to become more acquainted with their work today and their plans for the next 5 years.

On Wednesday, 12 February, during its plenary session, the commission will refine its conclusions to serve as a springboard for scientific research activity in Polish mining. It will also discuss the effects of scientific-technical cooperation with foreign countries in the coal industry.

Professor Jerzy Nawrocki, a member of the Council of State, also attended the meeting.

## R&D Program Implementation Inadequate

Warsaw TRYBUNA LUDU in Polish 13 Feb 86 pp 1, 2

[Text] On Wednesday, 12 February, the Party Central Committee's Mining Commission, under the chairmanship of Politbureau member Jerzy Romanik, gathered for a plenary session at the Katowice branch of GJG [Main Institute of Mining]. Present were member of the State Council, Professor Jerzy Nawrocki, Minister of Mining and Power General Czeslaw Piotrowski, and representatives from the Ministry of Environmental Protection and Natural Resources and the Office of Technology Development and Initiation.

Direct meetings that took place the previous day between members of the commission and the directors and the workers at the Main Institute of Mining and Mining Automatization "Emag" in Katowice and at the Center of Mining Mechanization "Komag" in Gliwice have confirmed that the scientific research base of the coal industry not only supports everyday mining practices but also promotes the direction of development in this industry from the various possibilities.

These ambitious programs of activity and the current plans of the departmental units, however, have encountered many difficulties and obstacles during implementation.

The efficiency of the initiatives already has encountered negative reactions at the factories and plants through only modest interest in the more modern production methods as well as in resistance tied to construction, research and above all the use of prototypes.

All of this--confirmed in the conclusions--unnecessarily extends the time period between documentation and production.

The commission positively evaluated the cooperation existing between our mining industry and that of foreign countries, especially with CEMA countries. However, they proposed the need for a broader embrace of common goals toward the full completion cycle through mutually conducted research, joint construction and production cooperation.

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ECONOMY

POLAND

MINISTER OF METALLURGY ON COOPERATION WITH USSR

Warsaw ZYCIE GOSPODARCZE in Polish No 7, 16 Feb 86 p 11

[Text] At the end of January 1986, Janusz Maciejewicz, minister of metallurgy and the machine building industry, met with a group of Soviet journalists accredited in Poland.

He informed the participants at the meeting about the tightening, which has resulted from agreements signed in recent months, of Polish-Soviet cooperation in the most important branches of the metallurgical and electromachinery industry. The delivery of machinery and equipment to the Soviet Union will increase in the current 5-year period by 50 percent as compared to the previous one and reach a value of 15 billion rubles. Trade turnover in the area of metallurgical raw materials, components and subassemblies for the electromachinery industry will also increase. According to the minister, fundamental directions in the development of specialization and coordination of production to 1990 in 16 branches were agreed upon: in shipbuilding (in which the value of deliveries will increase by approximately 1.5 billion rubles, encompassing 445 ships for export to the USSR); in the manufacture of construction equipment for buildings, roads, municipalities, airplanes, machine tools and instruments; and in the electronics and electrotechnical industry, where an increase of several percent in the size and value of Polish deliveries to Soviet consignees is anticipated.

In accordance with the resolutions coming from the 41st CEMA session, and also within the confines of agreements coordinating the economic plans of both countries, research and initiative cooperation will develop, which is intended to bring about the quickest implementation of newly created production designs. Such a program will include the creation of a ciphered color television, microprocessors and equipment for their production, robotics and automation of technological lines. Enterprises and academic institutions with related interests--there will be some 60 from the Polish side--will continue to cooperate.

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ECONOMY

POLAND

## REFORM EFFORTS IN ARCHITECTURAL DESIGN OFFICES

Warsaw ZYCIE WARSZAWY in Polish 7 Feb 86 p 3

[Text] The architectural design offices are the most conservative organizations existing in our country. During the last 30 years, all elements of our economy have undergone far-reaching changes many times over, changing their organization, operating procedure and economics; but the design offices have remained the same. It is no wonder that they have been much criticized recently, especially in designer circles. Criticism has been leveled against obsolete organizational forms through words, but, even more importantly, by the feet. In the last several years we have seen a steady outflow of designers from these offices.

As the system Magister shows, in the 5-year period 1967-1980, 1000 persons comprising at that time 16 percent of all design architects in Poland have left. Unfortunately, there is a lack of statistics on this subject from the last years. Simply stated, design offices not only do not guarantee workers adequate salaries, but also, even more importantly for creative occupations, a proper atmosphere at work.

This conservatism at the design office has resulted in the creation of many other organizational forms of design. In particular, these are architectural services offices organized at the regional branches of the Association of Polish Architects, cooperatives and designer partnerships. Some architects work independently on the basis of their acquired license.

Recently, attempts have been undertaken to reform the current organization of the design offices. At the Center for Design Research "Investproject" in Warsaw, whose design office is tied to apartment design, three experimental design offices have been started, called Architectural Authors' Offices. These offices should give architects better working conditions.

Such a design office, in contrast to previous organizational principles, will have complete freedom to select subjects and methods to resolve problems. The director of the design office (up to now rather an administrative position) is here the leader of the team. In principle, the director organizes the team, and his name and authority stand behind the work. Therefore, the design office obtains the creative status and intellectual freedom of performance of the architect's occupation. This is thus the first attempt in Polish design offices to reorganize their character.



Unfortunately, this reform is still not finished. The author's design office has not achieved financial independence, which is also a goal of the authors of the reform. The work is not performed on the basis of an agreement on the work in which the design office may have been directly interested, for example, saving production resources or economies of scale, but it is still in the "general economic bag" of the entire organization. This somewhat dulls the sharpness of the reform. Without economic independence, there cannot be a discussion of self-government. Obstacles that must be overcome in order to lead to full reform include various rules, the constantly changing tax system, and the need to formulate a new accounting system that is more laborious, which is opposed by the economic services.

In any case, after 6 months of activity, which for this type of work is a very short period, we can see the first effects. The most interesting project in the field of multi-family apartment buildings, which was presented by large, traditional design offices at the Warsaw Architectural Review in 1985, came precisely from the author's office "Investproject," directed by architect Bogdan Jaworski. This was a project of residential buildings on Szczesliwicka Street in Warsaw. The design offices have prepared several very interesting architectural solutions.

One can see that even this restricted independence has had a positive impact on the quality of designs and the work of designers. If this experiment succeeds and is brought to its conclusion together with all economic elements that belong to it, there will then be a concrete proposal for a new organization of design offices in Poland. Everyone has been waiting for a long time for this to occur.

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ECONOMY

ROMANIA

FOREIGN TRADE, COOPERATION ACTIVITIES EXAMINED

Bucharest REVISTA ROMANA DE STUDII INTERNATIONALE in Romanian Nov-Dec 85 pp 436-448

[Article by Ion Avram, Maria Avram: "Romania in the International Economic Exchanges"]

[Text] Having embarked upon building the new system from the position of a poorly developed country, with a backward industry and an unfavorable situation in the international division of labor, Romania, led by the RCP, has carried out a vast constructive work of rejuvenating social changes; it has ensured intensive industrial development and modernization, has built up the agriculture and other economic branches upon new technical and social bases, has developed science and education, art and culture, and has raised the people's level of civilization, while increasing the scope and efficiency of its participation in international economic exchanges.

Among all these impressive achievements, particularly outstanding was the period opened up by the Ninth RCP Congress, a period indissolubly linked to the creative activities and consistently revolutionary thinking of the party secretary general and Romania's president, Comrade Nicolae Ceausescu, an eminent leader who has made and continues to make a decisive contribution to mapping out and implementing the policies of the Romanian party and state.

The socialist construction during this period of intensive creative efforts and historic achievements was based on a new strategy, a strategy wide open to socioeconomic progress and founded upon a profound understanding of the objective laws of development, the specific conditions and needs of the national economy, and the general trends of international economy.

In this spirit, Romania's active and efficient integration in the international division of labor constitutes one of the basic elements of the party-state economic policy and an objective requirement for the country's socioeconomic progress, stemming from the internal conditions and objectives of socioeconomic development and from the increasing mutual economic dependence among the states of the world, determined by the contemporary scientific-technical revolution.

## I. Socioeconomic Progress--the Foundation for Romania's Active and Efficient Participation in International Economic Exchanges

In Romania's economic policy, the decisive role for expanding foreign economic relations is played by the intensive development of the production forces--as a decisive factor of progress and of resolute continuation of socialist industrialization, planned and implemented on the basis of contemporary scientific-technical progress and of a rationally allocated accumulation, and of developing and updating all economic sectors. The development and modernization of the national economy, the diversification and improved technology and quality of production, and the increased efficiency of social labor constitute the essential requirements for expanding international economic exchanges and for a continuously growing participation in the advantages of the international division of labor.

In view of the dialectical relationship existing between the consistent development of the national economy and the level of integration in the international division of labor, already at the party national conference of December 1967 President Nicolae Ceausescu stressed that: "As the country's material and cultural potential increases and as the national economy develops, increasingly better conditions emerge for expanding and intensifying Romania's economic and scientific-technical cooperation and collaboration with the socialist countries and with all the other countries of the world, in the interests of the progress of the Romanian people and of the general progress of society, and for the benefit of the cause of peace, friendship, and trust among nations. ("Romania Along the Path of Building Socialism," Vol 2, Bucharest, Political Publishing House, 1968, p 410)

Thus organically integrated in the general strategy of Romania's socioeconomic development, the concept of our party and its secretary general on the country's economic policy is based on the scientific view that the decisive foundation for each country's socioeconomic progress is the national economy and the national state as the basic nucleus of the international economy. Along this line, the decisive factor of development is the creative work of the respective people and the maximum mobilization of all material, financial, and human resources, in the conditions of the full assertion of each nation's right to shape its destiny according to its own aspirations.

At the same time, emphasizing the priority role of internal factors for socioeconomic development is organically complemented by each country's participation in the international division of labor, designed to activate domestic efforts, and by the establishment of an optimal field of action for interstate economic relations, within the context of the establishment of a new world economic order.

Proceeding from this concept, Romania promotes a policy of wide international opening and of active participation in the international division of labor, based on the principles of respect for national independence and sovereignty, equality of rights, noninterference in internal affairs, and mutual advantage --a policy reflected both in the growing volume of its foreign economic and scientific-technical exchanges, and in the expanding geographical area of these exchanges. At the same time, Romania is making a valuable contribution

to worldwide efforts to create a new system of international economic relations, a system apt to become a real factor of economic growth for each country and to fully contribute to detente, understanding, and peace in the world.

## 1. A Dynamic Concept of International Commercial Exchanges

Based on this concept and fully supported by the rapid economic and scientific-technical progress of the country, Romania's foreign economic relations have been continuously developing during the socialist period. Currently the volume of foreign trade is approximately 40 times larger than in 1950 and 11 times larger than in 1965. The opening of Romania's economy to international relations is reflected in the average annual rate of growth, which was 12.7 percent in the 1965-85 period. This evolution reflects a more rapid increase in our country's foreign trade than in general world trade, a fact which demonstrates the considerably improved place held by Romania in the international division of labor. Equally significant is the fact that in the past 20 years the increase in our country's foreign trade was 2.43 times higher than the increase in the national income, which demonstrates the accentuated role of its participation in international economic exchanges and in the implementation of social reproduction.

Within the framework of Romania's commercial exchanges, in keeping with the requirements of the world economy and of the current stage of development of our economy, exports have increased more rapidly than imports. The resolute implementation of this foreign trade orientation in the current 5-year plan has contributed to the achievement of an important trade balance surplus--\$300 million in 1981, \$1.8 billion in 1982, \$2.4 billion in 1983, and \$3.1 billion in 1984. The trade surplus has permitted considerable reductions of the foreign debt, Romania being one of the few countries of the world that has succeeded in repaying, by itself and within a short period of time, a considerable part of its foreign debt.

In view of the deepening economic dependence among countries and on the basis of the intensive development of industry, agriculture, and the other economic sectors, Romania's foreign trade will continue to rapidly increase in the coming years. Thus, as is envisaged in the 13th party congress directives, in the 1986-90 5-year plan the volume of foreign trade will increase by about 41-45 percent, while in the same period exports will increase more rapidly, by 52-56 percent. The fulfillment of this objective will contribute to increasing the country's participation in the advantages of the international division of labor, a fact which will further permit the achievement of a positive trade balance and thus help repay the entire foreign debt and consolidate Romania's currency reserves.

## 2. Modernizing Foreign Trade

Thanks to the consistent efforts made to develop the national economy and to restructure it in keeping with the directions of contemporary scientific-technical progress, profound qualitative changes have occurred in our country's foreign economic exchanges. Along this line, the basic trend has been to primarily increase exports of products that incorporate a high volume

of research, technology, and sophisticated work, thus ensuring a better utilization of resources and improving the country's exchange potential. Particularly significant for this basic orientation in Romania's foreign trade is the fact that the largest export increases have been recorded for industrial products, which currently make up about 70-80 percent of all exports, as compared to about 40-45 percent in 1950. Such dynamics resulted in a relative increase in the industrial products earmarked for export, which currently make up approximately 30 percent of the total production of this branch. Along this line, following the important shifts that have occurred in the structure of industrial production toward the rapid growth of the processing industry, primarily of the branches that represent technical progress, exports of products of the machine-building, chemical, and consumer goods industries have increased; in 1984 they made up 58 percent of all our exports, as compared to 36.2 percent in 1965 and only 7.2 percent in 1960.

The emphasis put on restructuring the industry and optimizing it contributed to both improving supplies of machinery, tools, installations, and equipment for investment projects (by 90-95 percent in the current 5-year plan), and to increasing our potential for exporting such products, including major industrial and other plants. Significantly along this line, while in 1950 machines, equipment, and automotive means held a wholly insignificant share of our exports--merely 4.2 percent of the total--in 1965 such products made up 18.8 percent, and in 1983 31.7 percent of Romania's exports. This also radically changed the relationship between the cash value of exports and imports of machine-building products. Thus, while in 1950 the export value of such products covered only 10 percent of the cost of imports, in 1983 the export value of products of the machine-building industry exceeded that of imports by about 80 percent.

Regarding chemical products, we note that before World War II our country exported very few such products, while the value of imported chemicals was approximately 12 times higher than that of exports. Within the process of socialist industrialization, as a result of the policy of better utilizing the national resources, the chemical industry increased particularly rapidly--198 times higher in 1983 than in 1950--so that the share of chemical products in the country's overall exports increased from 1.7 percent in 1950 to 6.4 percent in 1965, and to 9.7 percent in 1983. The intensive development of chemical exports is also reflected in the fact that Romania holds almost 1 percent of the world exports of chemical products, as compared to our country's 0.6 percent share of the total world trade.

Rapid increases have been recorded in the export of industrial consumer goods. Regarding this group, in 1950 the ratio between the cash value of exports and imports was 1:8.7, while in 1983 the value of exports was about 6 times higher than that of imports.

Simultaneously with the changes in the configuration of exports of major groups of products, due to the process of industrialization and modernization of economic structures, changes have also occurred within each group of products; a more rapid growth has been recorded in the area of new and updated products with high technical and quality parameters. Thus, among the products manufactured for export by the machine-building industry an increasing share

is taken by sophisticated products of precision mechanics, aviation, electronics and electrical engineering, computers, complex installations, etc. A series of products that have become traditional on Romania's export list, such as tractors, electrical and diesel locomotives, river and ocean vessels, autoterminals, ball bearings, etc., are being continuously improved from the viewpoint of technical and qualitative parameters, thus becoming increasingly competitive in international markets.

Within the chemical industry earmarked for export, more significant increases have been recorded in the areas of superior products such as synthetic fibers and yarns (114 times in the 1965-83 period), laquers and paints (36 times), plastics and synthetic resins (13 times), pharmaceuticals and biostimulants (9 times), etc.

Regarding industrial consumer goods, the largest export increases were recorded, particularly in the past 20 years, in the areas of fine household glass and ceramics (20 times in that period), knitwear (19 times), textiles (10 times), furniture (8 times), leather footwear (7 times), etc.

The improved quality of Romanian exports is reflected in the large percentage of various products exported, such as: 86 percent of utility vehicles (exported to 80 countries), 78 percent of tractors (exported in 90 countries), 60 percent of ball bearings, 45 percent of technological equipment for the construction and refractory materials industry, 40 percent of diesel and electric locomotives for trunk lines, 23 percent of metal processing machine-tools, 58 percent of vinyl polychlorates, 20 percent of synthetic fibers and yarns, 18 percent of footwear, etc.

The emphasis put on the qualitative aspects of exports is also highlighted by the efforts made to increasingly turn Romanian intelligence to good account by exporting planning and execution projects, consulting and engineering services, technological know-how, licences, technical assistance, cadres training, etc.

The expansion of our country's foreign economic exchanges is also marked by our participation in the past 20 years in 227 fairs and many other international exhibitions, where we won over 300 diplomas and medals.

The evolution of Romanian imports also expresses the consistent efforts made to optimize our country's participation in the international division of labor and to correlate the volume of goods purchased with the requirements and characteristics of the development of the national economy at each stage of socioeconomic progress, and with the objective trends of the world economy. In recent years consistent endeavors have been directed at rationally allocating imports simultaneously with incorporating new natural resources in the economic flow, introducing new products and updating existing ones, efficiently utilizing all available resources, and recovering, recycling, and reutilizing materials, parts, and subassemblies. These measures are aimed at appropriately supplying the national economy with scarce production elements while cutting currency expenditures.

In order to enhance the role of foreign economic exchanges for developing production and to raise their economic efficiency, we must ensure an optimal ratio between export and import volumes in the coming years. Naturally, this ratio will be based on intensively increasing the production for export and the degree of utilization of raw materials, taking into production new products with higher technical and functional parameters, raising product quality, improving marketing techniques, and signing long-term agreements that ensure stable foreign economic exchanges. Along this line we must stress the fact that in the coming 5-year plan the industrial commodity output will increase at an average annual rate of 6-6.5 percent, while the machine-building industry will develop at an average rate of 7-7.5 percent, and the chemical industry at a 8.5-9 percent rate; these branches, together with the metal processing industry, will produce over 60 percent of the country's exports by the end of the decade.

In accordance with the need to accentuate the intensive development of the economy, on the basis of continued modernization of the industry and the other processing branches, special emphasis will be put on the key sectors of machine-building, thus increasing and diversifying exports of technological equipment and complex installations, electronic and electrical engineering products, vehicles and rolling stock, and so forth. In the chemical industry, following the qualitative restructuring planned, a larger percentage of exports will be made up of small bulk chemical products, synthetic fibers and yarns, pharmaceuticals, dyes, laquers, and paints, etc.

Of a great importance for enhancing the competitiveness of Romanian goods and the economic efficiency of our foreign exchanges will be the implementation of the 13th party congress decisions and special programs designed to raise the technical and qualitative level of products, increase labor productivity, and reduce material and energy consumption. What is significant for this orientation is that over 96 percent of the commodity output in the area of machine-building will consist of new and redesigned products capable of technical and qualitative performances at world level.

### 3. A Resolute Orientation Toward Modern Forms of Foreign Economic Cooperation

Simultaneously with expanding its participation in international economic relations, Romania increasingly promotes superior forms of cooperation, among which cooperation in scientific and technical research, production sharing, and marketing cooperation take a particularly important place. This orientation ensures a larger participation by our country in the international division of labor, in keeping with the increased potential of our national economy and with objective trends in contemporary economy.

Currently, approximately 30 percent of Romanian exports and a considerable percentage of the raw materials necessary for social reproduction are ensured through international economic cooperation ventures.

The importance attached to these new forms of economic cooperation is highlighted by the fact that currently, our country is a partner in over 470 ventures of international economic and technical cooperation, among which are five joint production associations established in our country (manufacturing

cars, computer peripherals, gear reducers, acrylic fibers, etc.), 27 joint production associations in various areas of activity, 32 joint or individual commercial associations for a large variety of commodities in various geographical areas, banking associations, and 225 agrozootechnical and transportation enterprises.

The further expansion and improvement of these superior forms of cooperation is one of the primary objectives of Romania's future socioeconomic development, designed to significantly contribute to securing the necessary raw materials and energy resources, providing mutually advantageous production specialization, and implementing development programs at the lowest possible currency cost.

## II. Directions of Expansion of Romania's Foreign Economic Exchanges and Cooperation with Other Countries

Romania's policy of extensive international economic cooperation is reflected in the development of commercial exchanges and economic cooperation with all the countries, regardless of their level of economic development, economic potential, nature of social system, and geographical area, on the basis of the principles of international law. At the same time, Romania takes into account the contemporary world realities in the sense of the heterogenous character of the world economy from the viewpoint of the social systems of the various countries, levels of economic development, and geographical location, aspects that are reflected in the specific nature and forms of organization of economic exchanges with the various groups of countries.

The manysided progress of the Romanian economy and its increasingly active participation in the world economic flow, particularly in the past 20 years, have led to a considerable increase in the number of countries with which Romania maintains economic relations--from 98 in 1965 to 150 at present.

### 1. Cooperation with All the Socialist Countries

Within the framework of Romania's general foreign economic relations, the major share is held by commercial exchanges and cooperation with the socialist states: approximately 53 percent of our country's total foreign trade volume. Alone in the past 20 years the volume of commercial exchanges with the other socialist countries increased almost 7 times over. Substantial increases were recorded in the course of the 1981-85 5-year plan, when trade in certain products doubled.

Superior forms of economic cooperation have developed and are continuously expanding with this group of countries; a particular role is played by major economic projects built through joint efforts. Noteworthy along this line is the fruitful cooperation carried out with the USSR, which has remained our main economic partner, to develop production facilities in various important industrial branches such as metal processing, machine-building, chemical industry, iron alloys, cellulose and asbestos. The Stinca-Costesti hydrotechnical plant was jointly built on the river Prut, and many other ventures of scientific-technical cooperation are currently underway, notably in nuclear and aero-space areas.



Romania's fruitful cooperation with neighboring socialist countries is also materializing in utilizing the Danube potential through the joint construction with Yugoslavia of the Iron Gates I and II hydropower and navigation complexes, and the agreements already implemented with the People's Republic of Bulgaria for the construction of power plants at the Turnu-Magurele-Nikopol and Calarasi-Silistra. To that we can add the construction of the Giurgiu-Ruse heavy machinery plant. At the same time, Romania participates in utilizing to mutual advantage some deposits of raw materials and energy resources, and is involved in many industrial ventures with the PRC, GDR, DPRK, the Republic of Cuba, the MPR, and so forth. Alone in the chemical industry, Romania has aided or is aiding with technology and specialists in the construction of modern enterprises in the GDR, PRC, and DPRK.

Simultaneously with developing bilateral relations, Romania has expanded and diversified its multilateral cooperation with the socialist countries. As one of the initiators and founding members of CEMA, the first international economic organization of multilateral cooperation, our country is paying great attention to economic and scientific-technical cooperation within this organization, and is fully contributing to drafting, adopting, and implementing its basic documents.

Romania's principled position toward CEMA is materialized in its participation in the implementation of some 250 accords, conventions, and other multilateral agreements, most of them long term, signed among the interested CEMA member states. Some of the outstanding CEMA agreements concern the joint construction of large production capacities for the cellulose, asbestos, and metal alloys industries; the exploitation of natural gas deposits; the construction of a nuclear power plant in the Soviet Union, and the construction of a nickel-cobalt plant in Cuba, whereby our country will receive proportionate quantities of products manufactured by the new plants in exchange for the materials and services supplied. Similarly, a considerable number of Romanian industrial enterprises participate in the implementation of over 50 multilateral conventions on production sharing and specialization for the manufacture of important machine-building and chemical industry products. In the area of science and technology we can mention the more than 100 multilateral conventions of cooperation on specific research and development subjects to which Romania is a party, and cooperation in collective laboratories and joint research, design, and experimentation programs. At the same time, Romania is actively participating in cooperation within the 26 specialized international economic organizations and unions established by the interested CEMA member states. Participation in the implementation of all these multilateral accords and agreements, simultaneous with the continuous expansion of bilateral cooperation relations has materialized in expanded mutual commercial relations, favorable structural changes in the flow of trade goods, and a stable framework of long-term cooperation. Currently, the volume of commercial exchanges is more than 7.5 times larger than in 1960 and 20 times larger than in 1950, increasing at an annual rate of about 9.6 percent. The consistent dynamics of Romania's commercial relations with the other CEMA member states is 16 times larger than its national revenue growth, although lower than the growth of its industrial production, which increased about 37 times over in the 1950-84, a fact that demonstrates the important opportunities offered by the Romanian productive potential for further

expanding commercial exchanges with CEMA partners. Within the context of strengthening relations of cooperation with the socialist countries, primarily with its neighbors, Romania pays special attention to its relations with the Soviet Union. In 1984 the volume of trade between Romania and the USSR was about 3.3 times larger than in 1970, having increased at an average annual rate of 10.6 percent during this period.

Romania highly appreciates the accords reached at the 1984 summit economic meeting and resolutely acts to implement them with the greatest possible efficiency and operativeness. Along this line, great importance is attached to the joint decisions adopted in the past year by the higher Romanian and Soviet party leaderships, on the basis of which a long-term agreement was concluded envisaging substantial increases in bilateral exchanges in the coming 5-year plan. Of a similar importance have been the summit meetings held with Poland, Bulgaria, and the GDR, which led to the signing of long-term cooperation agreements up to the year 2000, and the actions pursued together with Czechoslovakia, Hungary, and other CEMA member states with a view to expanding long-term mutual cooperation in the areas of material production, science, and technology. Consistently working to develop cooperation within CEMA in accordance with the established aims of the organization, Romania has paid and continues to pay great attention to the particularly important objective envisaged in the statute and other basic documents of the council which calls for closing the gaps between and equalizing the levels of economic development of the member states which, as is known, began building the new system at different stages of development. Progress toward equalizing the levels of development will undoubtedly create opportunities for expanding cooperation and raising it to ever higher levels, in view of the fact that all forms of cooperation and specialization become all the more efficient as the participating states increase their economic and scientific-technical potential. Also, the gradual equalization of the levels of development is very important at an international level, because it demonstrates the superiority of socialism in the organization of interstate economic relations and the capacity of the new system to ensure general progress at a time when the consequences of the old policy of domination and inequality imposed by imperialism still persist and economic gaps are still deepening. Confident that the accords reached at the 1984 summit economic meeting provide a long-term and efficient framework for strengthening the cooperation among the CEMA member states and for jointly solving very important problems for the socioeconomic progress of these countries, such as securing the necessary raw materials and energy, expanding production sharing and specialization in major industrial branches, developing agriculture, etc., Romania is firmly determined to work to implement the agreements designed to improve the council's activities and to develop economic exchanges and production sharing. As Comrade Nicolae Ceausescu stressed at the 13th party congress, "We will actively participate in coordinating plans, production specialization, and joint scientific-technical research, so that the CEMA can play an increasingly important role in the socioeconomic development of the member states, in building socialism and communism, and in raising the wellbeing of our peoples." (Nicolae Ceausescu, "Report at the 13th RCP Congress," Bucharest, Political Publishing House, 1984, p 25)

Simultaneously with the endeavors to expand relations of economic and scientific-technical cooperation with the socialist countries, Romania is expanding its relations with the developing and nonaligned countries and with all the states of the world, regardless of their socioeconomic system and level of development.

## 2. Supporting the Efforts of Developing and Nonaligned Countries

The continuous development of economic relations with developing and nonaligned countries in Asia, Africa, and Latin America--one of the defining traits of Romania's foreign economic policy--is based on the mutual desire and interests of Romania and of the respective countries to ensure their progress and prosperity, assert the principles of international law in the world, and establish a new world economic order. In so doing, Romania endeavors to contribute, according to its possibilities and on the basis of mutual advantage, to the process of development of the developing countries. In consequence of this policy, which Romania has been promoting particularly in the past 20 years, the number of developing and nonaligned countries with which we have commercial and general economic relations has increased from 35 in 1959 to about 100 at present, while the share of these countries in Romania's foreign economic relations has increased from 4.9 percent in 1964 to over 24 percent currently, a figure that is far higher than their share of the overall world trade.

Within Romania's economic relations with the developing countries special stress is put on modern forms of production sharing and cooperation, on jointly building major projects for the economic progress of those countries, cadres training, etc. Among the economic projects completed or underway with such countries are: mining exploitations, refineries, machine-building technological plants, chemical enterprises, cement plants, high tension electrical lines, irrigation and land amelioration systems, agricultural farms and complexes, roads, railroads, bridges, social-cultural establishments, and so forth. The more than 180 such economic and social-cultural projects built by Romania in developing countries, with their cooperation, on sites stretching from the Hindu Mountains to the Sahara sands, from the waters of the Brahmaputra to the equatorial forests of Africa and Latin America, constitute illustrative proof of the fruitfulness of our country's cooperation with the developing countries, and of the creative work of their nations.

In view of the particular importance of national cadres for developing the economies of the new independent states, Romania has been and is granting them consistent support in this area, too; more than 20,000 young people from such countries are studying or perfecting their skills in Romanian universities, schools, and laboratories. Simultaneously, thousands of Romanian specialists provide assistance in 60 developing countries in the most varied areas of activity.

At the same time, many Romanian enterprises have established, together with partners from developing countries, joint production and marketing associations which function in accordance with the law of the states on whose territory they are located, too, and which contribute to implementing their

national programs. This constitutes a higher form of economic cooperation between Romania and the developing countries.

The plants and factories, economic and social projects jointly built by Romania and developing and nonaligned countries on a vast geographical area reaching from the Andes to the banks of the Ganges contribute to better utilizing the natural resources of those countries, establishing and developing a local industry, and implicitly, to strengthening the independence of young states. This constitutes a model of truly fruitful new relations of cooperation, mutual advantage, and assistance in the common struggle to speed up the progress of each nation, eliminate the old relations of inequity based on domination and oppression of the weak by the strong, and to assert new and equitable relations.

Believing that strengthening the solidarity and cooperation of the developing countries constitutes an important factor for the policy of independence, cooperation, and peace in the world, Romania is further intensively expanding its relations with this group of countries, to which it feels linked by many common interests, and together with them and with other progressive countries and forces, it is endeavoring to build a new world order.

### 3. Economic Ties Developed Capitalist Countries

In the spirit of the principle of peaceful coexistence and of the need for active participation in the international division of labor, our country has also been expanding its economic and scientific-technical relations with developed capitalist countries. Their share of Romania's overall foreign trade was about 29 percent at the beginning of the 1981-85 5-year plan. At the same time, more than 100 cooperation ventures have been initiated with firms from these countries, and over 50 joint production, marketing, and service associations have been established in areas including banking and international insurance. The scope of Romania's presence in international markets has led to the establishment of many joint associations designed to market its products, particularly in developed capitalist countries, to the emergence of the first joint associations with Romanian participation in the areas of consulting, inventions, and nuclear technology (in the FRG, France, and England), to the establishment of joint international transportation associations (in the FRG, Italy, France, and England), of five joint banks (with headquarters in France, England, FRG, and Italy), of a joint Romanian-American insurance company, and of a Romanian-Polish-Hungarian-American insurance association. In order to meet various requirements of the national economy, several joint production and marketing associations have also been established in Romania (with partners from the United States, France, FRG, Italy, Austria, and Japan) in the areas of machine-building and chemical industry.

In the unfavorable international situation of the past years, created by disruptions in the economies of the capitalist countries and exacerbated by the world economic crisis, discriminatory and protectionist measures, and all sorts of restrictions and embargoes consequently instituted by some of those countries, the volume of trade among various states or groups of states has shrunk. This has also had a negative impact on the economic exchanges between

certain western countries and our country, exchanges that had progressed due to the increasing export and cooperation potential of the Romanian economy and to the needs and flow of the international economy.

President Nicolae Ceausescu, resolutely speaking out against any restrictions and limitations on international economic exchanges, at the time of such actions by certain western countries called attention to the fact that "In the current conditions of the economic crisis, what is needed are not restrictions, but intensified and expanded exchanges, cooperation, and production sharing." (Nicolae Ceausescu, "Report to the National RCP Conference of 16-18 December 1982," Bucharest, Political Publishing House, 1982, p 31) This position remains fully topical today, and its promotion by western states could secure a stable and long-term basis for their economic recovery.

Romania believes that the developed capitalist states remain an important partner in its foreign economic relations and are apt to increase their share of its traditionally efficient and nondiscriminatory commercial exchanges. The talks recently held by President Nicolae Ceausescu with some western leaders have materialized in accords that will undoubtedly contribute to increasing and diversifying Romania's economic relations with the respective countries.

Romania's increasingly active participation in the international division of labor, which has become an activating factor for its economic growth, has also brought about its involvement in the activities of international economic organizations. Currently, Romania is a member of more than 40 international economic and financial bodies, such as: the UN Economic Commission for Europe, UNCTAD, GATT, FAO, IMF, IBRD, and so forth. Generally speaking, Romania actively participates in 80 international governmental organizations and 700 nongovernmental organizations, where its presence is marked by many proposals stemming from President Nicolae Ceausescu's concept on intensifying the world economic flow, overcoming the current world economic crisis, and establishing a new world order.

In consistently promoting a policy widely open to commercial exchanges and international economic cooperation, Romania proceeds from the premise that the noteworthy progress recorded in its socioeconomic development, particularly in the past 20 years, to which will be added the remarkable achievements in modernizing and diversifying all the branches of the national economy and in raising the technical level and quality of production that have been envisaged in the program documents of the 13th congress for the 1986-90 5-year plan and up to the year 2000, permit Romania to participate ever more actively in the international economic flow and to intensify its relations and contacts with all the countries and with an increasing number of international bodies. In our country's conviction, such a policy allows solutions to be found to problems of interests to all mankind. Romania also believes that through this participation it is contributing to international detente and to the great cause of peace and cooperation in the world.

In accordance with his principled orientation, the party secretary general and president of the republic summed up the policy that will further be promoted to intensify Romania's participation in the international economic

flow and in solving mankind's major problems thus: "We believe that we must broadly intensify our economic relations with all the socialist countries, developing countries, capitalist countries, and all countries of the world, and that we must actively contribute, in this way, too, to overcoming the international economic crisis, achieving new relations of full equality among all the states, establishing a new world economic order, and forging a world in which each nation can develop according to its wishes, without any foreign interference." (Nicolae Ceausescu, "Speech at the RCP Central Committee and Central Party Aktiv Plenum," Bucharest, Political Publishing House, 1985, p 29) As in the past, this policy, which has contributed to the unprecedented prestige enjoyed by our country in the world, will further be consistently promoted, for the benefit of peace and mutually advantageous international cooperation.

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ECONOMY

ROMANIA

# EQUAL DISTRIBUTION OF PRODUCTION RESOURCES AMONG COUNTIES UNDER WAY

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[Article by Mihai Grigoriu, deputy director of the State Planning Committee:  
"A Scientific Policy of Harmoniously Developing the Production Forces  
Throughout the Country"]

[Text] Within a relatively short period of time, which is identified with the prestigious theoretical and practical activities and the revolutionary passion of the brilliant leader of socialist Romania, Comrade Nicolae Ceausescu, the profoundly scientific and clear-sighted policy of the party has radically changed places and people from one end to the other of the country, altering the fate of people of all nationalities, providing new and equal living conditions and aspirations for all as conditions of the new era we are living under the blessings of a system of social justice and equity.

The vast accumulations currently materializing in the harmonious and balanced development of all the counties and localities are based--with a profound and lasting effect--on the distribution of the production forces throughout the territory according to a scientific concept, established with the decisive contribution of the party secretary general, Comrade Nicolae Ceausescu, under which economic and social criteria are harmoniously blended. The great economic gaps that existed among the counties disappeared within a relatively short period of time; one 5-year plan after the other, the state invested huge funds in ensuring that the equality of rights among all the fatherland's citizens is fully realized, regardless of the place where they live and work.

This concept, characteristic of our socialist sytem, has become a constant feature and has through the years materialized in socioeconomic realities that fully confirm its correctness. "Building socialism," Comrade Nicolae Ceausescu stressed, "requires the forceful development of the production forces throughout the country, within a uniform and long-term concept. This is the only way to ensure a higher degree of civilization for all the localities, eliminate the population migration toward the cities, harmoniously change the entire social structure and life, achieve full equality concerning living and working conditions, and realize the rights and permit the assertion of all the citizens in our social life."

Table No 1

County classification according to total volume of economic activities

<u>Total volume of economic activities</u>	<u>Overall number of counties</u>	
	<u>1965</u>	<u>1985</u>
Up to 10 billion lei	21	-
10-20 billion lei	17	1
20-40 billion lei	2	17
40-60 billion lei	1	11
60-80 billion lei	-	7
80-100 billion lei	-	3
Over 100 billion lei	-	2

In this spirit, a particularly important role for substantiating the policy of rational and balanced distribution of the production forces throughout the territory has been played by improvements in the administrative-regional organization of the country, which has raised to a higher level the concept of regional socioeconomic development, and which is based on just and equitable principles and orientations. Thus, a uniform long-term strategy has been established to ensure consistent and rapid development of the more backward counties, continuously increase the number of jobs available in those counties, and efficiently and fully utilize the material and manpower resources of all the counties, taking into account both economic and social criteria.

Here are some figures to illustrate the classification of counties according to the overall volume of economic activities in the year 1965 and 1985. The blend of economic, efficiency, and social criteria is currently convincingly reflected in everything that has been achieved in material and cultural areas in all the counties in the past 2 decades. Along this line, most illustrative is the concept of regional deployment of industry and the industrialization process itself, as the decisive factor of economic modernization in each county and the sound basis for raising the level of progress and civilization of all localities. (table 1)

In comparison with the national growth of industrial production, far higher rates of growth have been recorded in some counties in the past 20 years, as is shown in table 2. By rapidly increasing the number of jobs in the less developed counties, we ensured better employment for the working population and substantially reduced the migration toward industrial centers; industry has become the leading economic sector in all the counties, and its degree of complexity and modernization has been raised due to the systematic and priority modernization of the branches most affected by technical progress. In keeping with the harmonious development of all the economic sectors, the incomes of all categories of working people have considerably increased in all the counties, as has the volume of trade and services; an impressive housing and urban program has been implemented, while the material basis for education, culture, art, health, sports, tourism, etc. has forcefully developed.



Table No 2

## Rate of growth of industrial production in some counties

	1965=1		
	1985		
Overall economy	6.1 times higher		
Arges	10.4	"	"
Bistrita-Nasaud	14.6	"	"
Buzau	12.4	"	"
Calarasi	9.4	"	"
Covasna	9	"	"
Galati	14.7	"	"
Ialomita	9.6	"	"
Iasi	10.8	"	"
Olt	17.2	"	"
Salaj	20.9	"	"
Teleorman	9.2	"	"
Tulcea	9.8	"	"
Vaslui	12.1	"	"
Vilcea	10.4	"	"
Vrancea	9.3	"	"

Taking housing as an example, it is significant to note that, in comparison with the 1945-65 period, after the ninth parth congress the number of families who moved into new apartments was almost 7 times higher. At the the same time, however, in counties Mehedinti, Satu mare, and Teleorman the number of such families was 17 times higher, in counties Botosani, Buzau, and Covasna 20 times higher, in Salaj and Vrancea 21 times higher, and in Bistrita Nasaud 26 times higher, a fact that fully verifies the correctness and realism of the policy of more rapidly developing more backward counties.

We can state that there is practically no locality in the country that did not record rejuvenating changes in people's working and living conditions, particularly in the past 20 years, as a mark of confirmation of the full equality currently enjoyed by all the citizens of socialist Romania. Former small towns and market villages with modest economic activities and urban development have become strong urban centers; such is the case of Pitesti, Botosani, Buzau, Tirgoviste, Tg. Jiu, Slobozia, Piatra Neamt, Slatina, Zalau, Suceava, Alexandria, Tulcea, Vaslui, Focsani, and many others, to name only county seats. Equally significant in this respect is the classification of towns according to number of inhabitants in 1965 and 1985 (table 3).

Table No 3

	Number of towns	
	<u>1965</u>	<u>1985</u>
Overall	183	237
--towns with under 20,000 inhabitants	126	134
--towns with 20,000-100,000 inhabitants	44	82
--towns with over 100,000 inhabitants	13	21

Aside from the above mentioned administrative-regional reorganization, the scientific concept of harmoniously developing the production forces at regional level materialized--at the initiative and under the direct guidance of Comrade Nicolae Ceausescu--in the establishment of special programs for the development of counties and localities, worked out by specialists in the most diverse areas of activity and endorsed by the country's highest bodies, a fact that provides the process of regional development not only with the guarantee for social balance and equity, but also with continuity for a long period of time. It is equally important to emphasize that through the establishment of the Congress of People's Councils, the Legislative Chamber of People's Councils, and regional planning commissions for each county, and on the basis of the many improvements made in regional leadership and planning, we have ensured an organizational and institutional framework for ongoing planning and systematic supervision of the manner in which the party policy is implemented in the area of regional distribution of the production forces.

Within the process of building the comprehensively developed socialist society and Romania's advance toward communism, the 1986-90 5-year plan constitutes a new and qualitatively superior stage of raising the entire country to higher levels of progress and civilization. In the spirit of the 13th congress decisions and of the Third Congress of People's Councils, the program-directive concerning Romania's regional socioeconomic development up to the year 1990 features new qualitative elements concerning the directions and criteria of regional distribution of the production forces.

Thus, the major objective of the new 5-year plan we have just begun is to increase the weight of intensive and efficiency factors in the process of economic progress in all the areas, more specifically in the area of regional development. The levels of socioeconomic development of the counties will be further evened by implemented measures to improve the organization and modernization of production processes, capable of ensuring a more marked increase in labor productivity, full and efficient utilization of production facilities and existing capacities, a higher technical and qualitative product level, reduced consumption of raw and other materials, fuel, and energy, and rapid production growth (table 4).

Table No 4

The development of the overall volume of per capita economic activities in  
1986-90 in some counties

	percentage <u>1990</u> <u>1985</u>
Overall national level	124.1
of which:	
Alba	139.4
Botosani	127.3
Calarasi	169.6
Giurgiu	137
Ialomita	125.5
Mehedinti	137.3
Teleorman	132.4
Tulcea	125.1
Vilcea	136.9
Vrancea	133.8

It is important to highlight the fact that by 1990 the economic potential of all the counties will expand while the differences between them will be further reduced by implementing the party's scientific policy, thus meeting the requirements of the new stage that we will travel in the current 5-year plan. Succintly expressed, the policy options of regional development concern the following elements: better utilization of the existing production capacities and their modernization, so as to be able to increase production in all the counties merely by enhancing labor productivity and better utilizing resources, and by raising the technical and qualitative level of products; building small size new production facilities, particularly in counties with a lower industrial potential and small towns, so that by 1990 each county should have an industrial production totaling at least 50,000 lei per capita; new production facilities or expansions of existing ones should be located as far as possible on existing sites, so as not to have to establish new industrial sites; more markedly developing small-scale industry, particularly in rural areas, so as to better utilize the manpower throughout the year, at the same time turning to good account local resources of raw and other materials.

Proceeding from the potential existing in various parts of the country, new sources of energy--solar, wind, biomass, geothermal waters, etc.--and recoverable energy resources will be extensively utilized in the current 5-year plan. Similarly, the agriculture--the overall yields of which will increase at an average annual rate of 5.4-5.8 percent--will intensify its contribution to developing the economic potential of all the counties (in consequence of these developments, the average volume of activities in this basic economic sector is planned to come to 15,700 let per capita by 1990, as compared to 12,100 lei in 1985).

On the basis of the intensive development of agriculture and of the more marked growth of small-scale industry in rural areas, the regional plan for the 1986-90 period ensures an intensive economic development of the communes,

which is the real foundation for raising the living conditions of all village localities to the level of conditions in urban centers. In view of the increasing consumer requirements for services, the program adopted by the third people's councils congress in this area envisages doubling the total volume of services by 1990, while the average per capita value of services should come to at least 3,500 lei by 1990 in all the counties, whereby stress will be placed on developing and diversifying services in more backward counties.

In view of the rising demand for increasing the role of intensive factors in economic development, in the current 5-year plan appropriate conditions will be created in each county to promote scientific research and technological development, and to introduce technical progress both through specialized units and institutes of higher education, and technical divisions in enterprises, and by extensively involving all experts, technical cadres, and highly qualified workers in this process.

In keeping with the multiple and complex tasks assigned to the counties in the 1986-90 5-year plan, resolute and responsible steps must be taken to secure skilled and highly qualified manpower for all the sectors and counties, and to stabilize the work force in agriculture, with a view to considerably reducing manpower migration and commuting. As an outcome of the qualitative progress planned in this area, as new jobs are created and as labor productivity and the national revenues increase, better conditions will be ensured for raising the living conditions of the working people throughout the country and for the many-sided assertion of all the fatherland's citizens.

In accordance with the major directions and orientations concerning the harmonious and balanced socioeconomic development of all the counties and localities in the current 5-year plan, a concept evolving from the creative thinking of the party secretary general, Comrade Nicolae Ceausescu, our illustrious leader, whose name is now linked to the most prosperous and flourishing era in the country's entire history, all the regions of the country will record unprecedented progress.

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POLITICS

BULGARIA

#### SIGNIFICANCE OF APRIL 1956 PLENUM ANALYZED

Sofia NARODNA ARMIYA in Bulgarian 19 Feb 86 pp 1-2

[Article by Colonel General Mitko Mitkov, chief of the Main Political Administration of the People's Army: "Dashing Forward to the Future"]

[Text] Three decades have passed since that month of April when the BCP Central Committee held its plenum, which has remained engraved forever in the memory of the Bulgarian people. In terms of the daring of its resolutions, scale of influence on all areas of social life and the revolutionary role they played in the all-round development of the party and the country, the April 1956 BCP Central Committee Plenum is an event of permanent historical value.

Its remarkable contribution is that it rejected the cult of personality, alien to Marxism-Leninism, restored the Leninist principles and norms of social and party life and laid the beginning of a new stage in building socialism. Today, 30 years later, we are fully justified in saying that the decisions of the April Plenum created the necessary conditions, prerequisites and guarantees for the implementation of profound quantitative and qualitative changes in the overall life of our society. Above all, the role of the Central Committee as the collective leader of the party and the country was firmly enhanced; a deep change was made in the style and methods of party and state leadership. The party promptly directed its forces to resolving the new crucial problems of our development. Its leading role was enhanced and its ties with the working people strengthened. Our heroic and industrious people rallied even more closely around the Communist Party and their constructive energy, enthusiasm and creative inspiration were released.

The principal merit of the April 1956 Central Committee Plenum was the formulation of the party's April line. This is a creative line, a line which expresses the interests of the people and is based on their forces and possibilities; it is a line of construction and of steady social renovation.

The April line is the direct continuation and fruitful development and enrichment of the most valuable traditions and features of the party dating from the Blagoev and Dimitrov periods. At the same time, it is a Leninist line. It represents the creative interpretation and development of the tremendous positive experience of the CPSU and the other Marxist-Leninist parties and the entire international communist workers movement. That is why its development and application is a valuable contribution made by our party to the treasury of Marxism-Leninism.

The most accurate characterization of the April line is found in the resolution of the 12th BCP Congress on the occasion of the 25th anniversary of the April 1956 BCP Central Committee Plenum. It states the following: "The April line of the BCP is Marxism-Leninism in action under the specific conditions of our country, the live unity and interaction between creatively developing theory of scientific socialism and the specific sociohistorical practice of the working class and the broad popular masses in the struggle for building and developing socialism in our country."

The line drafted at the April Plenum was enriched and improved with every subsequent plenum and congress and in the daily activities of the party and the state. In the past decades it established itself as the Leninist April general line of the Bulgarian Communist Party. As pointed out by Comrade Todor Zhivkov, our first party and state leader, "the April line is a strategy for leadership and action. It earmarks the high road to building mature socialism and a gradual transition to communism in Bulgaria."

The April line is the result of the collective mind and will of the entire party and the constructive activities of the Bulgarian people. However, it is an unquestionable truth that its elaboration and practical implementation in building socialism in the past 30 years has been directly related to the comprehensive political, theoretical and organizational activities of Comrade Todor Zhivkov, the BCP Central Committee general secretary and chairman of the NRB [Bulgarian People's Republic] State Council. His political creativity and innovativeness enriched the theory and practice of mature socialism, making him the architect and creator of the Leninist party line and the universally acknowledged political leader of the BCP and Bulgarian people, noted Marxist-Leninist and outstanding and respected leader in the international communist movement.

The April path which we have covered convincingly proves the strength and vitality of the April party line which, displaying Leninist wisdom and maturity and a creative approach and insight into the future, is leading the country to new peaks of social progress.

The main historical results of the implementation of the party's April line is the current socioeconomic, political and spiritual aspect of the homeland. April Bulgaria is today a country with a powerful economy, blossoming culture, science and education, a country enjoying high international prestige. It is an active member of CEMA and the Warsaw Pact.

An important gain of the April strategy was making Bulgaria a developed industrial state and establishing and maintaining high and stable rates of socioeconomic growth. We are proud of the fact that previously poor and backward bourgeois Bulgaria is today exporting electric cars and hoists, metal cutting machines and computer equipment and developing contemporary sectors bearers of technical progress, such as machine building, the chemical industry, electronics, instrument manufacturing and the nuclear power industry.

The economic balance of the past 30 years is a joyful and optimistic one. Since 1956 capital assets in the national economy have increased about tenfold and basic production assets by a factor of almost 14. Industry has

become a leading national economic sector. In 30 years its output has increased by a factor of 14. Our socialist agriculture is successfully developing as well. Within the same period of time agricultural output increased by a factor of 2.5.

The dimensions of the April social policy are impressive. Essentially this policy is one of steadily satisfying the growing material and spiritual needs of the people and the systematic implementation of the principle "Everything in the Name of Man and Everything for the Good of Man." Concern for the people and their well-being found its concentrated manifestation in the party's December 1972 program of upgrading the living standard. Despite the difficulties triggered by poor weather conditions in recent years, this program is being successfully implemented. This is confirmed by the following figures: between 1956 and 1985 the country's national income increased eight-fold in comparable prices. On the basis of this universally synthesizing economic indicator, Bulgaria is in one of the leading positions in the world. Per capita consumption has increased by a factor of 4.5 and real income by a factor of more than 4.4. Social consumption funds are developing particularly dynamically. From 48 leva in 1956 they will reach 915 leva per capita in 1986, i.e., they will have increased by a factor of 19.

The development of a streamlined structure of the socialist political system in our country is a major accomplishment of the April party line. In the past 30 years the leading role of the BCP has reached a qualitatively new level. It has developed as a party of creative Marxism-Leninism, a revolutionizing and transforming force and a tried and wise political leader of the Bulgarian people in the struggle for building socialism and communism.

At the same time, the sociopolitical functions of the socialist state as the power body of the working class, allied with all detachments of the working people, were enriched and gained new content. Our Bulgarian contribution to the political theory and practice of mature socialism is the sociostate and state-social principle in the management and development of a number of social areas and processes.

As a result of the systematic implementation of the April party line, its militant alliance with the Bulgarian National Agrarian Union has strengthened; the role of the Fatherland Front, the Bulgarian trade unions, the Dimitrov Komsomol and the other mass sociopolitical organizations was enhanced.

Socialist democracy reached a new level after the April Plenum. Real conditions and guarantees were created for expanding the participation of the broad popular masses in the administration of social activities and their conversion into the subject of social management. The role of the primary units was enhanced and the working person became the main content of the improvement of our political system. Thanks to the scientific April party policy in the realm of social relations, the ideological, sociopolitical and national unity of the entire society became stronger and healthier. Today the Bulgarian nation is a single, cohesive and united socialist nation.

The April party line played a particularly fruitful role in the development of the spiritual area and in social activities. The April cultural policy became the unshakable ideological and political foundation on which the unity of the Bulgarian socialist intelligentsia is building and strengthening systematically and on a principled basis. The organic combination of the ideals and principles of socialism with the ever fuller expansion of the creative forces and capabilities of the people and their involvement with the durable values of art and culture was a major gain of the April line in the spiritual area. As a result of this policy our country achieved remarkable successes in science, artistic culture and public education. The transforming power of the Leninist April general line of the BCP has had an exceptionally beneficial influence on strengthening the defense capabilities of the homeland. Thanks to this, in the period since the April plenum and, particularly, after the October 1958 BCP Central Plenum, the Bulgarian People's army developed as a reliable armed force of the country and a reliable defender of the socialist gains and peaceful toil of the people. Very well armed and trained, with an unshakable m o r a pirit, it is steadily enhancing its combat readiness in accordance with the requirements of the party and the steadily worsening international situation, caused by imperialism, making its contribution to the joint armed forces of the Warsaw Pact.

The main conclusion drawn at the 12th BCP Congress was that the April line is the right line, confirmed by life and by the party's historical experience. What are the main sources of its transforming power? What are the prime sources of its vitality? What is the secret of its fruitful durability?

Above all, the fact that the April line is the true line, scientifically substantiated and consistent with the basic needs of our social development, is of determining significance. One of the sources of the vital strength of the April line is the party's ability and skill creatively to apply the theory of Marxism-Leninism and the general laws of building socialism in accordance with the specific features of Bulgarian reality and to seek and find scientific solutions of tremendous practical significance. The party's comprehensive theoretical and applied efforts during the April stage found their impressive manifestation in the BCP program for building a developed socialist society in our country, which was adopted at the 10th Party Congress.

The party's theoretical work has been particularly fruitful after the 12th Congress. Under Comrade Todor Zhivkov's leadership, applying an April spirit and innovativeness, concepts, approaches and views were developed by the party, which are of strategic significance in our further development.

The April line is strong and vital because it expresses the interests of the people. It offers extensive opportunities for the practical manifestation of the initiative and constructive power of the masses, of millions of people. It is a line of and for the people but also a line which is implemented through and together with the people.

The April line is an innovative revolutionary theory and practice, a line of combining the achievements of the scientific and technical revolution with the



advantages of the socialist social system. Based on the latest achievements of science and technology, it daringly formulated new guidelines which are blazing paths in the country's socioeconomic development for decades into the future. The resolutions of the February 1985 and January 1986 BCP Central Committee plenums are imbued with the Leninist April spirit. They provided a scientific program of action for the political, state, economic and social bodies and organizations, for the systematic utilization of the achievements of scientific and technical progress.

The April line armed the party with a new historical experience. It awakened new forces and capabilities within it. At the same time, it relies on the rich international experience in building socialism in the fraternal socialist countries and, above all, draws richly on the inexhaustible experience of the CPSU and the Soviet state. The priceless gain of the deeply international Leninist line, in terms of spirit and nature, is the enhancement of relations between the NRB and the Soviet Union, between the BCP and the CPSU. These are relations of fraternal cooperation and comprehensive rapprochement and a true example of socialist internationalism in action.

The crystally pure Bulgarian-Soviet friendship is the great motive force of our socialist upsurge. It is our deeply felt personal matter, our destiny and a prerequisite for new victories in our common struggle for communism.

The strength and vitality of the April line are also found in the ability of our party to have a self-critical attitude toward its work and its ability to lead the entire people, the entire society in an irreconcilable struggle against weaknesses and shortcomings. The socialist society cannot renovate itself without self-criticism. As Comrade Todor Zhivkov emphasizes, "We can advance only by getting rid of what weighs on us, that which hinders our way." The new broad tasks to be implemented require the decisive restructuring of the style and methods of work and management, high-level organization, order and discipline and an uncompromising struggle for uprooting all negative phenomena in our life.

A distinguishing feature of the April line is its combativeness, its irreconcilable attitude toward bourgeois and revisionist ideology and its permanent struggle for the purity of Marxism-Leninism.

The April party line is a line of decisive and firm actions in support of peace, for the conversion of the Balkans into a zone free from nuclear and chemical weapons and for establishing neighborly relations and cooperation among Balkan countries. Our party, our entire people welcome and fully support the new Soviet program for rescuing mankind from the nuclear threat, contained in the declaration of Comrade Mikhail Gorbachev, CPSU Central Committee general secretary, made at the beginning of this year. An earth free of weapons and threats during the third millennium of mankind and peace and cooperation among nations is our ideal.

However, the world continues to live under the ghost of thermonuclear war. The U.S. imperialists are continuing to draw plans for the militarization of space, in the vain hope of establishing military strategic superiority over socialism. All of this demands of us always to keep our "powder dry," not to

slacken our vigilance even for a moment and steadily to strengthen the country's defense and to increase our contribution to enhancing the combat defensive power of the Warsaw Pact armed forces.

Such are some of the sources of the strength and vitality of the Leninist April general party line.

The 13th BCP Congress will open in less than two months, on 2 April 1986. It will provide a new revolutionary impetus to the development of society. On that same day, 30 years ago, the creative April Plenum began its proceedings. This coincidence is a symbol of the historical continuity between these two events, of the readiness of the party to continue to develop and enrich the April line as a decisive prerequisite for the socialist upsurge of the homeland. Life confirmed clearly and impressively the unquestionable truth that the line earmarked by the April Plenum has become firmly rooted in the life of the people and it is organically related to Bulgaria's present and future. That is why we can say with full justification that in terms of its strength and vitality it is aspiring forward, to the future.

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POLITICS

CZECHOSLOVAKIA

## INTENSIFICATION OF SOCIALIST CONSTRUCTION EXPLAINED

Prague TRIBUNA in Czech 11 Dec 85 pp 8-9

[Interview with Dr Ilja Sedivy, head of the Marxist-Leninist Institute of the Central Committee of the CPCZ, by Jiri Kohout of the PRAGUE TRIBUNA; date and place not specified]

[Text] [Question] What is intensification? Why do we talk about it at this particular point in time in the construction of developed socialism? Is it a historical coincidence, or is intensification a proper part of development of socialism?

[Answer] Where the concept of intensification itself is concerned, it is necessary to start with the well known thought of Marx about the means of expanding production--extensive and intensive. At the same time, the formulation of the meeting materials still has an important theoretical value. The problem, as I see it, is chiefly the fact that in practice these elementary theoretical findings, along with the clear political directives, have not been completely followed. It is therefore a continuously important goal to familiarize, respect, work out and develop this concept.

I would also like to remind you of an idea that was brought out at the Sixteenth Congress of our party, that the process of intensification in its most important part, the development of the technological progress, is the revolutionary goal of the whole society. It becomes obvious that during the transition into intensive development we are not concerned with one particular innovation or a single effect, but a significant change in the orientation of the whole economy. Additionally it is not at all indifferent how long the transition from extensive to intensive development takes.

[Question] The situation today looks like the train of the extensive development is at its final destination. So we have to change trains.

[Answer] You can put it that way. But caution should be exercised as we can not follow the train analogy to the letter. In reality it looks like in some areas of the reproduction process we have already transferred to the other train, in others we are just now transferring, and in some sectors we are still traveling in

the comfort of extensive development. For any further thoughts, we should perhaps abandon the picture of transferring from one train to another altogether.

There is one more assumption we must get rid of. In the intensification process, there are not just changes in the production parameters. Nor is it just an improvement in the utilization of resources, investments, research data, and so on; but also the creation of qualitatively new environment to create a truly fully ripened socialist relations in the society, and most of all in production. It is also possible and necessary to utilize the possibilities and elements of development of the so-called preintensification, as for example a simple thrift, multisided economy, rationalization etc.

[Question] From the theoretical viewpoint, much about the intensification process is clear. But, at the same time, it is said that in practice these findings and political directives have not been fully utilized. Why?

[Answer] The core of the answer is as I have already stated--intensification is not just a matter of production or economics.

We have enough experience and theoretical findings that intensification is truly an entity of the whole society. This concerns not only the qualitative improvement of the whole system of production relationships and the overall production method, but also the qualitative changes of the whole system of social relationships and the consciousness of the individual. We are literally concerned with the turn to intensification occurring in the society as a whole. Without that, it would be impossible to reach positive results even in the production sector.

Concretely it means that the process of intensification, particularly the transition of the economy onto the road of intensive development, depends on how quickly we proceed with the utilization of the findings of revolutionary science and technology in practice, on how quickly we can perfect the system of the plan controlled economy and the whole economic mechanism, and how we progress with the utilization of the means of the socialist economic integration and international division of labor. Much depends, often above all, on the success of developing a creative initiative and activity of the workers.

[Question] So that means that intensification of the socialist economy is not just a question of shortages of the traditional sources of economic growth.

[Answer] The opinions that the necessity for the intensification of our economy was caused chiefly or singularly by the signs of the worldwide economic depression and the worsening of the availability of resources and energy and the depletion of the work force, appeared even in our professional literature.

We take the position that intensification is more than a short lived necessity, but rather one of the basics of the development of socialism on its own basis. This conclusion is based on experiences from the development of socialism.

here and abroad. Namely it is impossible to reach the necessary level of dynamism and effectiveness of social development by merely employing more possibilities for the use of natural resources, and the work performed by people and machines. That kind of development leads, at a certain stage, to a dead end street for production. We lived through the signs of this situation at the end of the 1970's, when every increase in the national revenue began to practically point at a guaranteed growth of production. Therefore, not just a theory, but practical experience show that intensification is basically necessary for the realization of socialist community progress.

[Question] While emphasizing the need for intensification, it is, at times, argued that there is a need to adjust and adapt our economy to a new internal as well as international set of conditions.

[Answer] Even though the change of internal and international conditions of the reproduction process unquestionably plays a particular role, it is not a decisive or the only factor of intensification. In fact, it is not possible to identify intensification with the simple expansion of modern technology into production. Actually, intensification is more a transition from the processes of the technological development to the real technological revolution in the society's production, therefore a revolutionary change in the production work force and production relations of the society.

[Question] This is then closely related to the truly profound changes in the character of work itself and additional society relations and even the personal development of the individual...

[Answer] The essence of socialism makes it clear that it is a society which can exist and develop only with the forward progress of high dynamism and effectiveness of not only production but also other society processes, including primarily the standard of living as well. This belongs among the basic principles of the new society. Intensification and a qualitative change of the production work force and production relations are necessary chiefly to ensure further progress toward a level of adequate development of socialism, and so we can even responsibly discuss the perspectives of communism. It is not a matter of chance or a particular set of circumstances that determine how much time the transition to the intensive development of economy and the whole society takes.

[Question] We spoke of the profound and substantial relationship of the economic and social development of socialism with intensification. I am afraid that an impression might arise that sooner or later, intensification must occur in our development automatically.

[Answer] At times these ideas do surface. They are however totally without substance.

The development of socialism is a part of world events. Today this can be blamed directly on the most aggressive imperialistic circles for sharply increasing of the international tension, the growing danger of the total annihilation of the human race. At the same time there is the continuously

developing worldwide revolutionary process, the growing strength of socialism, the social strength and class movement in the developed capitalistic countries and the national liberation movement in the developing nations. This world situation demands the speeding up of social development of socialism, of a dynamic and highly effective forward progress toward the level of a fully developed socialism.

Secondly, it is obvious that slow growth and low effectivity of development only complicates social progress. The low and ineffective creation of resources cannot, thereby, allow the full utilization of opportunities and priorities of socialism, the inevitability of its development and the creative powers of the people.

And third, in today's world there is at the pinnacle of development of the production force, a very rapid developmental process, which is the mark of a transition of the technological revolution onto a new developmental level, or to another stage. Here, the socialist countries must use all the political, economic, social, and spiritual priorities of the new social order to reach the forefront of the revolutionary changes of the production force. In other words, they must link, even more tightly and effectively, the technological revolution with the communist social revolution.

In a summary, all this creates pressure for the quickest transition onto the road to intensive development. The transition into intensive development can and must be made a reality by a conscious, planned and organized effort by people under the leadership of the communist party. It is not a goal to be reached in the next twenty or thirty years, but rather a mission which we must complete in the next few years.

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POLITICS

CZECHOSLOVAKIA

## UNDERSTANDING MARXISM-LENINISM PRESUPPOSES SOCIAL ACTIVISM

Prague RUDE PRAVO in Czech 24 Jan 86 p 5

/Article by Ladislav Hrzal and Stepanka Capova: "To See Things and Possibilities Realistically"/

/Excerpts/ The building of a developed socialist society graphically shows that individual and societal development is impossible without freeing human labor, without liquidating antagonistic classes, and without developing socialist democracy and the evergrowing participation of the masses of working people in the management of society. These changes are not achieved easily, without problems, obstacles and hindrances. We are facing a long-term, complex problem. This refers--as emphasized in the resolutions of the 15th Plenum of the CPCZ Central Committee--primarily to the spiritual development of the individual, his ideological and moral upbringing, culture, art--in other words, his overall development.

The understanding of scientific world opinion, namely, the theory of Marxism-Leninism, has a great significance for the overall development of the individual. The basic characteristic of scientific world opinion is its revolutionary nature related to the needs and interests of the working class and of all working people. This revolutionary nature presupposes a linkage of theory and practice, of the immediate needs and interests of the working people with long-range needs and interests, a linkage between tactics and strategy aiming at a socialist society. A dialectic-materialistic approach vis-a-vis reality requires that neither our theoretical nor practical activity be permitted to stop at the level we have achieved. We must always look forward and creatively and concretely solve the serious problems before us, using criticism and self-criticism, and see and develop the nuclei of new things. The entire spirit of Marxism-Leninism calls for a critical approach toward reality, including the building of socialism, a struggle against those views which hinder vital thinking and slow down practical work. There is no doubt that Marxist theory must be constantly developed on the basis of practical experience, including the latest results of individual scientific branches.

Any separation of theory from practice leads to inductive reasoning and idle speculation and, in the end, to idealism. The development of the Marxist-Leninist theory and practice contradicts the slander by revisionists and anticommunists who try to persuade the public that a linkage between

Marxist-Leninist theory and politics leads to dullness and to the loss of its critical ability and revolutionary fervor. On the contrary, the documents adopted at the congresses and meetings of the communist and workers' parties, especially the CPSU, clearly demonstrate a new degree of creative development of Marxism-Leninism. Especially at the present time it is generally accepted that the "spirit" of Marxism-Leninism is in the first place materialistic dialectics, an enemy of formalism, opportunism and dogmatism.

One of the specifics of a socialist society is the fact that such a society cannot be built by communists alone but must be built by the masses of the people. In order to implement the advantages of socialism it is necessary to have creative activity of the broad masses, whose members obviously cannot be all theoreticians in every field needed for the development of society. Their creative activity can only be released by a scientifically clarified program adopted by the entire society, a program which will understand that it is actually possible to realize an all-societal goal as well as the masses' own goals, and complete identification with these goals. Gradually, based on practical experience, the masses will become aware that work for society at the same time means work for themselves.

Most of our citizens are certain that socialism is the most progressive socioeconomic system realizing the humanistic ideals of mankind. In spite of a general agreement with socialism, some of our citizens are not fully aware of its real virtue and especially of their own possibilities, rights and duties. These citizens have not yet become true and cognizant subjects of society. Socialism (like capitalism and international political problems) is understood by these people as something external, as something which is beyond the limits of the individual. The result is that they give up their effort to understand and solve social problems. They cling to the passive position of an individual who considers life as the work of various external forces over which he has no influence, against which it would be useless to fight but whose beneficial aspects can be fully utilized. Such a passive attitude toward sociopolitical development carries within itself a pessimistic evaluation of one's own human possibilities and significantly predetermines the value orientation of its bearer. The people of this type realize the need for their own creative self-assertion in various activities. In this broad area of different possibilities of self-assertion we can find the people's artistic creativity, their effort to build their own house or country cottage, and the absolutely nonsensical effort to prove their own status by conspicuous and prestigious consumption which usually results in antisocial behavior.

The nucleus of a socialist society consists of convinced adherents of its ideas who consciously and actively work, create, struggle with shortcomings, derive joy from their successes, are angry at the indifference of others but carry on to achieve their best. They are experiencing their membership in the collective, they are optimistic in spite of various disappointments they encounter, they understand social progress as something which is part of their life. For them, the central goal of life is creative work and the training of new generations.

In addition to their maturity of ideological-political consciousness, these people are also characterized by certain desirable moral qualities of character



which, of course, exist among all people. However, courage, honesty, tenacity, eagerness to know, responsibility, independence and other positive qualities, together with Marxist-Leninist world opinion, create a new type of citizen. To a certain extent each individual possesses these qualities. However, most of them begin to develop themselves only in the course of training and practice.

One of the characteristics of everyday consciousness which is not needed for an accelerated development of socialism is a conservative trend in judging socialist realities, especially their changes. It is the prevailing opinion that each change can threaten what has already been achieved, that it disrupts what has been known and tested and what one knows how to handle. Such an attitude is, in the first place, a demonstration of passivity toward life and social progress, a consequence of the fear of endangering one's own stability. At the same time, it is a demonstration of the lack of willpower to invest one's efforts in change regardless of whether such change had been adopted as a correct decision, the unwillingness to use one's own energy to learn once again and to solve the new problems.

The building of developed socialism, scientific-technical progress, the intensification and optimization of production, the accelerated development of production forces and the corresponding changes in production relations are, in the minds of the people, accompanied by two contradictory notions.

One of these is an expectation of positive changes and with it the improvement of life, working conditions, way of life, and the improvement in the standard of living. This is reflected in the all-societal agreement with planned changes and is a typical corollary of all progressive changes. The tendency of the rising expectation has both a positive and negative effect. The positive factor makes it easier to push through the changes even in spite of the conservative trends in our normal thinking. The negative factor endangers the future influence of changes in the sense that the expectation of the positive changes is unrealistically high and its nonfulfillment will threaten the adoption of further changes. The second notion is the internal defensive reaction of the individual who will be affected by these changes which usually starts to function at the moment when the pertinent measure is to be implemented. This reaction is not openly demonstrated; it is expressed more often in a variety of delaying tactics which the individual sometimes is even unable to precisely define for himself.

The new tasks will require a new, if we may use the expression, philosophy for everyday activities. We are not talking about separating certain parts from Marxism-Leninism and adapting them to the needs of the everyday thinking of the contemporary individual. The new tasks, the new possibilities and everything related to them must be solved at a high theoretical level. At the same time, however, it is necessary to formulate them in such an understandable language that they can be understood and accepted in our everyday consciousness to become an organic part of the social consciousness of our people.

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POLITICS

CZECHOSLOVAKIA

PROGRESS OF DANUBE DAMS SURVEYED

Prague SVET HOSPODARSTVI in Slovak 4 Feb 86 pp 2-3

/Article by Eng Gabriel Jencik, Office of the SSR Government: "The Gabcikovo-Nagymaros Waterworks System"/

/Excerpts/ The section of the Danube shared by Czechoslovakia and Hungary is of international importance because it currently constitutes a serious obstacle to foreign navigation. Originally the Danube had three problematic sections in terms of the needs of international river navigation. These were the delta where it enters the Black Sea, the cataracts in the vicinity of the iron gates, and the shallows in the Rajka-Gonyu area of the Czechoslovak-Hungarian section. This last section remains the sole critical point, now that the Sulim navigational canal and the Romanian-Yugoslav Iron Gates I and II waterworks have now been completed. As a result of a sharp change in gradient here, the waterway frequently clogs with sediment. Navigation is also inhibited by numerous shallow points and narrows. Despite intensive dredging operations in this area the navigable depth is only 140-180 cm, whereas current models of tow ships and cargo barges require minimum depths in the 250-cm range.

The final draft plan for the exploitation of the Danube through a system of waterworks known as Gabcikovo-Nagymaros was prepared jointly by Czechoslovak and Hungarian experts. The plan addressed the following list of priorities:

- protecting the surrounding countryside from flooding;
- utilizing the energy potential of the river;
- improving the conditions for navigation.

In addition to these main objectives other tasks were resolved as well, even though they were not specific goals of the investment project. These include the concentration of the annually transported gravel sands at a point accessible to their place of utilization, the creation of areas for recreation and water sports, the obtaining of water for irrigation purposes, etc.

Preparing for the construction of the Gabcikovo-Nagymaros waterworks has required substantial effort. This is because Czechoslovakia and Hungary conduct independent economic policies. Investment policies also differ and each

country manages its investment process differently. The first official step in making the investment and design preparations was an agreement reached by government delegations from both sides in April 1963 concerning the formulation of so-called joint investment objectives. These delegations agreed on a fundamental politicoeconomic principle, namely that both sides would share equally the costs of joint investment projects. By the same token they would share equally in the benefits from the construction of a system of waterworks, as well as the costs involved in operating, administering and maintaining such a system. Because 56 percent of the facilities of this system would be on Czechoslovak territory the government delegations agreed that each side would construct the facilities lying on its territory, with the Hungarian side making up for the above difference in distribution with work on the Czechoslovak facilities.

However, in attempting to put together a list of objective construction costs, it proved impossible to use the usual construction cost sheets of each country because the budgetary systems of the two countries differ. For this reason the costs involved in the construction of this system were stated in parity rubles, the unit used to evaluate goods within the context of the CEMA. The joint investment task was formulated in 1964 and augmented in 1967.

A second step, which subsequently acquired a material-legal character of international importance, was the conclusion of an agreement concerning the formulation of a joint contractual design. This was signed on 6 May 1976 in Bratislava. The goal of this design was to establish the overall size of the facilities, the technical specifications and parameters of the equipment, and construction and assembly procedures. This was then to serve as the basis for a budget and construction schedule, with these materials serving as the basis for the signing of an international contract for the construction of the Gabčíkovo-Nagymaros system of waterworks (SVD).

In view of the fact that the CSSR and Hungary utilize different technical standards, regulations, and state resolutions, it was agreed to develop unified design guidelines. Both sides bore equal responsibility for the development of design documentation, at the same time that each one was responsible for those facilities on its own territory.

One of the main tasks of this joint design was the development of a detailed and precise construction budget. Making valuations based on ruble conversions turned out to be imprecise because the resultant prices reflected differing results of foreign trade activities. Because the relation between the price of labor and deliveries in korunas and forints showed less fluctuation, the two sides agreed that the valuation of facilities constructed through joint investment would be made in the respective national currencies at a given fixed price level (1 January 1975). With this as a basis, costs were divided on a 50:50 basis between the CSSR and Hungary.

The joint design contract then became the basis for a contract for the construction and operation of the Gabčíkovo-Nagymaros waterworks system. This was signed on 16 September 1977 in Budapest. This contract defines the SVD as a single operating system composed of the Gabčíkovo and the Nagymaros

waterworks. The contract specifies that costs be borne in a natural form, meaning that the contracting parties contribute their half of the total investment not through financial contributions but with actually performed work.

Regarding ownership of the facilities, in value terms 56 percent of the total project is on Czechoslovak territory. This, along with the fact that the SVD is a unified system, results in a situation in which a portion of the state property of Hungary lies on Czechoslovak territory and will be run by Czechoslovak organizations. By the same token a portion of the state property of the CSSR will lie on Hungarian territory.

Certain main facilities, which the contract specifies in detail will be under joint ownership. In the CSSR these facilities will include the derivation channel and the drop at Gabčíkovo, while in Hungary it will be the Dunakiliti levee and the drop at Nagymaros. These facilities will be carried as real property under the applicable Czechoslovak regulations governing the administration of national property with the right to manage the derivation channel for the benefit of the Hungarian side. Documents in Hungary will be handled in an analogous way.

Another important document signed at the same time as the contract was an agreement between the governments of the CSSR and Hungary concerning mutual assistance during the construction of the SVD. The contract established approximate deadlines for the startup of the system, with the completion of the first unit at the Gabčíkovo power plant to be by 1986 and the final unit (the eighth) by 1989. The first generating unit at Nagymaros is to be completed in 1989 and the final (the sixth) in 1990. Construction work is slated to be fully completed by 1991.

In addition to the deadlines for the construction of this joint investment project, the Czechoslovak side committed itself to building, between 1978 and 1981, for the Hungarian side an extension of the state route from Rusovce to Rajka, a trunk cable on Czechoslovak territory, and work on a drainage channel, with the total value of the work coming to Kcs 268 million. The Hungarian side committed itself to completing the construction of other facilities valued at Kcs 60 million, with the difference to be made up by Hungary with the delivery of 848 gigawatt hours of electricity produced by the Gabčíkovo plant between 1986 and 1988.

The signing of the above contract and agreement marked the end of the primary period of construction preparation for SVD and made it possible to begin construction. Construction work on the first facilities proceeded on schedule. The Czechoslovak side began work on all the major facilities of the Gabčíkovo waterworks and the Hungarian side began work on some facilities related to the Dunakiliti levee and preparatory work on the drop at Nagymaros.

The worsening of the international situation at the end of the 1970's forced the socialist countries to re-evaluate their investment objectives and policies. The Hungarian side proposed in 1981 a slowing down or termination of construction through 1990 and stopped working on its facilities. Based on a Hungarian request, in 1981-1982 a joint evaluation was made of technical and economic

issues involved in the possibility of slowing down or terminating construction of SVD. Immediate termination was rejected because so little of the construction work had been completed and because it was necessary to maintain the quality of the construction work for later completion. Both sides had also been counting on the electricity that SVD would provide and for this reason as well decided that construction work could not be interrupted.

#### Principal Power Generation Data for the System

Indicator	units	Gabcikovo	Nagymaros	together
maximum turbine absorption capacity	m <sup>3</sup> /sec	5,208	2,800	-
installed capacity of power plant at generator terminals	MW	720	158	878
power plant capacity at 90 percent of maximum head-flow	MW	700	146	848
electricity production assuming average useage in average year	GWh	2,980	1,040	4,020
electricity production assuming peak load useage in wet year	GWh	3,660	960	4,620
electricity production assuming peak load useage in dry year	GWh	1,775	925	2,700
electricity production assuming peak load useage in average year	GWh	2,650	1,025	3,675
composed of: peak load power	GWh	810	55	1,525
off-peak load power	GWh	370	-	810
basic power	GWh	1,470	970	1,349
Peak load operation at 90 percent of maximum head-flow	hours	5	5	
use of installed capacity in average year at peak load operation	h/year	3,790	6,500	
diameter of runners	meters	9.2	7.5	
gradient	meters	16.0-21.5	3.04-9.43	

The construction schedule was also determined by negotiation. The conclusion was reached that, because of the delayed startup of work by the Hungarian side and problems with grouting work on the Czechoslovak side, it would be possible to put the first power generation unit at Gabcikovo into operation in 1990 and the first unit at Nagymaros in 1993, in both instances a completion date some 4 years later than originally planned. The joint documents concerning this change in deadline were signed on 10 October 1983 during a visit of the chairman of the Council of Ministers of Hungary, G. Lazar, to the CSSR. These documents did not alter the content, objectives and basic principles of the contract and agreement; they related strictly to the time schedule of the project.

In 1983 the Hungarian side began sporadic work on its territory, and at a later date started to excavate the drainage channel for the Gabčíkovo power plant. During 1983 Hungary completed work on its portion of the investment project valued at 160.4 billion forints. In subsequent years the Hungarians have constantly increased their work volume. In 1984, for instance, 446.7 million forints were expended, 265 million of which were for work performed on the territory of the CSSR. In 1985 the planned volume of construction work by the Hungarians was 663 million forints. Last year preparatory work was begun on the levee at Dunakiliti, specifically the construction of the sealing trough. This construction will proceed using the same technology as that used on the drop at Gabčíkovo, but on a smaller scale. Hungary announced competitive bidding on an international scale for the contract to construct the sealing trough. Zilina Vahostav was one of the firms participating in this competition. It was the firm that had successfully constructed the sealing trough at the Gabčíkovo station. Eventually the Vahostav bid was not accepted and the work awarded to an Austrian firm, which began the preparatory work in September.

In accordance with the plan the Czechoslovak side concentrated mainly on the construction of the Gabčíkovo waterworks. From the start of construction to the end of 1984, Kcs 4 billion were invested. Under exceptionally complex geological conditions the grouting work was completed on the trough of the Gabčíkovo power plant. The state plan for 1985 projects the completion of Kcs 902.6 billion of construction and technical work on SVD. Government spokesmen have indicated that the pace of construction by both sides is currently in accordance with the proposed schedule.

The ongoing and detailed updating of design documentation is resulting in some changes from the specifications in the original joint contract. All such changes must be discussed and approved by both parties. So far 73 such changes have been made, none of which, however, has had a significant impact on the technical parameters and function of the facilities.

Another component of Czechoslovak-Hungarian cooperation in this SVD Gabčíkovo-Nagymaros project is the performance of joint technical and supervisory work. So far all such controls have indicated that construction work on the specific facilities is being performed to specifications.

9276/12228

CSO: 2400/200

POLITICS

POLAND

#### PERSONNEL CHANGES AT KRAKOW PZPR PLENUM

Krakow GAZETA KRAKOWSKA in Polish 4-5 Jan 86 pp 1, 2

[Article by (sar): "Plenary Session of the PZPR Krakow Committee: The Fight Against Degeneration and Social Pathology Concerns Us All"]

[Text] Yesterday's plenary session of the PZPR Krakow Committee had as its leitmotiv the idea expressed by General Wojciech Jaruzelski, First Secretary of the PZPR Central Committee, at the 18th Plenum: "To wage determined fight against everything that poisons the social climate, violates elementary principles of the rule of law, and therefore strikes a blow at the Eleventh Congress line, at our socialist renewal, and at the policy of our party."

During the debate, occurrences which have negative impact on our public life were critically assessed; considered were the tasks of party members and organizations in the Krakow Province in combating social evil, degeneration, and shortcomings, as well as violation of people's rule and principles of social life.

The debate was chaired by Jozef Gajewicz, first secretary of the PZPR Krakow Committee; representatives of local authorities, heads of investigative bodies, and representatives of some workplaces were invited. Roman Mistewicz, vice-chairman of the Supreme Audit Chamber [NIK], was also present.

The introductory report was presented by Wladyslaw Kaczmarek, secretary of the PZPR Krakow Committee; he said, inter alia, that the past year was a period of intensive political activity targeted at reconciliation between people of diverse opinions who accept the principles and the aims of People's Poland. To strengthen the positive tendencies, and to counteract various difficulties and weaknesses, we will strive at further broadening of party influence over all activities of employees' self-management bodies, in order to wage determined fight against occurrences of waste, improvidence, and dishonesty. Further strengthening of links between local authorities and the population will be promoted by party initiatives, apt to bring about quicker and more effective reaction to complaints, motions, and demands, as well as fight against incidents of coteries, dishonesty, and abuse of office for personal gain. This aim should be furthered by decisive improvement in the audit system, especially the internal one, which could and should counteract in time all the budding improprieties, evasion of legal standards, and misappropriation.

"Each party organization," said W. Kaczmarek, "should systematically and thoroughly acquaint itself with the results of internal and external investigations, analyze them, draw conclusions, and demand implementation of all their recommendations by the administration. All party committees and organizations should contribute to the promotion of law and public order. In particular, they should fight against the most disturbing occurrences, such as some people's striving for gaining material assets at all cost in a manner contrary to law and to principles of social justice." Public opinion demands more effective fight against various incidents of social pathology and degeneration. "There is no way of rooting out various social plagues and pathological occurrences without general and consistent activity by all the party members."

In the debate, the first to take the floor was General Jerzy Gruba, head of the Provincial Office for Internal Affairs. He said that despite obvious improvement, many crimes, of economic nature in particular, still go unpunished. However misappropriation and organized crime-style theft of socialized property are being revealed more quickly and more effectively. The fight against bribery and corruption has been stepped up. Coordination of all the audit and social control initiatives is still necessary for protection of the domestic market, in particular to prevent seizure of some short-supply articles by criminal elements. There is need--confirmed by public opinion demands--for intensified fight against illegal production of alcohol, its illicit distribution, and drunkenness in general. Youth calls for special concern. We are troubled by occurrences of teenage criminality. We need therefore tight cooperation between law enforcement agencies and all educational institutions. Resocialization efforts are also required, coupled with fight against various phenomena of social pathology, among young people in particular.

Sejm deputy Wladyslaw Matlak dealt with the tasks of basic party organizations in combating evil and injustice, as well as in counteracting abuses. Referring to opinions expressed by many non-party people, as well as by party members, he said that the climate of general denunciation of various pathological occurrences keeps improving. He criticized improper attitudes of some people in leading positions, who deter both party organizations and self-management bodies from timely intervention to counteract evil.

Anna Rolska presented some achievements of the party organization in the provincial court, aimed at more effective fight for public welfare and observance of civic rights.

Jerzy Kurdziel, member of the PZPR Central Committee, spoke plainly: We often see evil, but we are helpless. The society expects the party to wage a more determined and effective fight for law and order. Such expectations can be met only through better surveillance, as well as through consistent implementation of recommendations and calling to account of all people responsible for law violations. The entire Krakow population should be aware that our party will provide for more strict responsibility of functionaries, employees, and party members, for all cases of harmful attitude, behavior, or action.

Wladyslaw Machejek discussed the situation within the community of Krakow writers, pointing out some reasons which had brought about controversial assessments of various incidents concomitant on creativity, as well as the status of writers, those in particular who cope with contemporary problems.



Where to begin the fight against social pathology? The question was posed by Kazimierz Buchala, member of the Constitutional Tribunal. With good law, with activities of state organs, with the society as a whole! We have good laws which conform to the requirements of our fight against social pathology. Only the law on combating social parasitism needs amendment. But the implementation of the rules now in force lags behind. We have, for instance, an excellent law on combating alcoholism, but its results have not been sufficiently felt. Much depends on the attitude of the population as a whole, on whether it would denounce each and every case of law violation, and would refuse to condone any deviations from the principles of the rule of law.

Leszek Szczesny described the causes and the workings of law violation, as revealed during investigations run by the Supreme Audit Chamber [NIK]. The most important are shortcomings and infringements in the area of internal control, tolerance by superior authorities of illicit economic activities, and refusal of some works managements to inform party organizations and self-management bodies about the investigation results.

People demand reasonable and responsible public discipline, said Andrzej Draus. We should therefore create a better climate for investigation. Each party organization should regard its results as helpful for discovering incidents and facts which require keen analysis and rethinking. Labor discipline is unsatisfactory. This can be tolerated no longer.

Bogdan Michnowicz talked about the first months of activity by the Workers and Peasants Inspection [IRCh], set up by the party. Among other things, it has found out, thanks to its investigations, that the situation was highly unsatisfactory in the housing cooperative movement. In most cooperatives self-management was being abused for private gain and embezzlement. Many fictitious affidavits of entitlement for additional living space were being issued. Cooperative managements ignored IRCh postaudit recommendations. The Krakow Party Control Commission had to intervene. Personnel consequences must be drawn. IRCh also checked how agricultural products were preserved, how Krakow had prepared for winter, and other problems. It will soon start to check on how its recommendations have been implemented. It receives more and more letters, complaints, and grievances from Krakow and province inhabitants, an indication that its activity breeds trust.

In the second part of the debate Zbigniew Stachura presented the results of actions connected with registration of people who persistently shirk work. Marek Sadowski talked about labor courts' endeavors to promote better labor discipline and compliance with the rule of law, while Jerzy Hausner pointed out how some priests have violated the principles of cooperation between the state and the Church: this gave rise to many harmful public occurrences.

Andrzej Zaleski assessed the material and moral damage to the society caused by an insufficient fight against embezzlement and crime. There is a need for better legal consciousness, as well as for awareness of consequences of law violation; public opinion should be better and more fully informed--by mass media--about corrupt practices and crime, as well as about the consequences their perpetrators had to pay.

Roman Mistewicz, vicechairman of the Supreme Audit Chamber [NIK], dealt with the duties assigned by the resolution passed at the 18th Plenum of the PZPR Central Committee, to all the investigative agencies. He stated that the fight against evil has become more effective. He pointed out that for NIK itself it is the effectiveness of postinvestigation actions which counts most, since attempts have frequently been made to explain away revealed shortcomings. In the near future more attention will be paid to check compliance with the law, in particular as far as newly-enacted laws are concerned. All NIK inspectors have been instructed to inform fully all the party organizations and self-management bodies about the results of their work. They will also find out how superior authorities react to postinvestigative recommendations.

Jozef Gajewicz took the floor to sum up the debate. He pointed out that before the Tenth Congress we have to maximize all our efforts in order to strengthen the party position, because on it the implementation of the difficult tasks discussed at the Plenum depends. We must react immediately to all signals of impropriety, but it is absolutely necessary to check out matters meticulously, to act consistently in verifying all charges, since only thus can we promote law-abiding behavior which will be understood and approved by the population. Once each case has been brought to completion, we have to ask each party member where he had been and what he had done in time to prevent abuse. People often signal various cases of misappropriation, embezzlement, living above one's means. Investigative bodies must check out all those signals meticulously, and verify them precisely. When somebody is innocent, he should be exonerated; but if he acted in violation of law, he should suffer the consequences. And people should be fully told about it. Jozef Gajewicz also drew the audience's attention to the significant influence of scholarly and social communities in our city. We therefore need a benign climate which facilitates the building of additional bridges of reconciliation and mutual understanding; that, too, depends on our party's initiative.

A resolution was passed which defined the tasks of the Krakow party organization in implementing the assignments discussed at yesterday's session. Today GAZETA readers can acquaint themselves with the following fragment of the resolution, which concerns in particular us newsmen and our activity: "In Krakow press, radio, and TV, to broaden the front of fight against all incidents of social pathology and all threats to public security, against all criminogenic occurrences and anti-socialist activities. Party committees and organizations are called upon to support such activities, and to cooperate closely with editorial boards. Courageous and responsible criticism should enjoy party support, as well as provide the basis for party assessments, motions, and decisions concerning criticized people and institutions."

The Committee instructed its Bureau to prepare a timetable for implementation of the resolution passed.

When organizational issues were then discussed, Stanislaw Kolodziej's application for release from his duties as secretary of the Krakow Committee was approved. Jozef Grzegorzczuk, secretary of the Krakow Committee and member of its Bureau, was released from his functions following his return to a professional career. In a secret ballot, Jan Babas and Jerzy Grupa were elected members, while Wladyslaw Kasperczyk and Jerzy Wrobel were elected alternate members, of the PZPR Krakow Committee.

A Department of Housing and Urban Affairs of the PZPR Krakow Committee was then set up, and the appointment of Wlodzimierz Lakomski as its head was simultaneously approved. Jerzy Grzybek was approved as head of the Economic Department. Thanks were expressed to its long-time former head, Tadeusz Nowicki, who had retired.

The plenary session of the PZPR Krakow Committee was ended with the singing of l'Internationale.

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7 April 1986

POLITICS

ROMANIA

## BRIEFS

LIGHT INDUSTRY DEPUTY MINISTER--The President of the Socialist Republic of Romania decrees that Comrade Constantin Bostina is relieved of his position as deputy minister of light industry and Comrade Constantin Gheorghescu is appointed deputy minister of light industry. [Excerpts] [Bucharest BULETINUL OFICIAL in Romanian Part I No 10, 24 Feb 86 p 3] /8309

PRESIDENTIAL APPOINTMENTS--The President of the Socialist Republic of Romania decrees that: Comrade Gheorghe Trocan is appointed deputy minister of wood processing and construction materials, Comrade Gheorghe Brehuescu is relieved of his position as deputy minister of finance, Comrade Iugenia Bichi is appointed deputy minister of finance, and Comrade Nicolae Manescu is appointed deputy state inspector general in the State General Inspectorate for Investment-Construction. [Excerpts] [Bucharest BULETINUL OFICIAL in Romanian Part I No 11, 8 Mar 86 p 3] /8309

PEOPLES COUNCILS APPOINTMENTS--On the basis of Article 97 of Law No 57/1968 on the organization and operation of the peoples councils, the President of the Socialist Republic of Romania decrees that the following comrades are delegated to fill the position of first deputy chairman of the Executive Committee of the county peoples councils: Aurel Costea, in Harghita County; Ioan Hadnagy, in Maramures County; Ion Cioara, in Neamt County. Comrade Constantin Bostina is appointed to fill the position of deputy chairman of the Executive Committee of the Botosani County Peoples Council. [Excerpts] [Bucharest BULETINUL OFICIAL in Romanian Part I No 11, 8 Mar 86 p 3] /8309

CSO: 2700/111

POLITICS

YUGOSLAVIA

CATHOLIC WEEKLY EDITORS WARN OF FALSE REPORTING

Zagreb GLAS KONCILA in Serbo-Croatian 16 Feb 86 p 3

[Excerpt] In the past few weeks we have been witnesses to embarrassing deception aimed against the GLAS KONCILA editorial board about which we must warn the public. In two cases it was a question of false information we received from a Bosnian area with the forged signatures of our reputable correspondents there. Because the reports were so skillfully worded and nothing in them raised any doubts, we did not feel the need to confirm them by phone. The first involved false information regarding a local parish priest (Bukociva - Renewed Church, GLAS KONCILA of 26 January, p 13), and the second was in regard to an entire monastic group (Graz - New Administration, GLAS KONCILA, 9 February, p 10). But much more far-reaching is the false information that was given both to GLAS KONCILA and to the Austrian Catholic news agency KATHPRESS. This agency in its bulletin of 30 January first published on the basis of a Radio Vatican report that the parish priest Filip Lukenda, ... who had received somewhat before this a special recognition from the SAWP of Bosina-Hercegovina, had been arrested. But the same agency in a bulletin of 4 February reported that GLAS KONCILA wrote that representatives of the Banja Luka bishop had not been able up to now to visit the imprisoned Lukenda and that GLAS KONCILA reports that a number of other Catholic and Orthodox priests are incarcerated in Yugoslavia, some of whom have been sentenced to many years." It said further that GLAS KONCILA reports that defense witnesses were not admitted to the court proceedings which is contrary to Yugoslav law."

The truth is that GLAS KONCILA has not published these reports and they are not correct on the whole. As far as we know, the lawyer of the parish priest Lukenda has been in contact with him...and as far as we know, there are perhaps three or four priests and a person being trained as priest imprisoned throughout the SFRY.

The very unpleasant question remains as to who is deceiving the public and for what reason. Such lies cannot be spread by people who love this church and this people but only by those who want to fish in muddy waters on behalf of who know what interests. The church wants to hear only the truth, and the number of priests in prisons is largely not a basic indication of the actual position of the church in a country. GLAS KONCILA will make every effort to learn the origin of these false reports.

/13104  
CSO: 2800/197

POLITICS

YUGOSLAVIA

LOCAL LC GROUPS REJECT CANDIDATES; 'CAMPAIGNING' SCORED

Belgrade EKONOMSKA POLITIKA in Serbo-Croatian 3 Mar 86 p 6

[Excerpt] In regard to the forthcoming elections, one should not overlook three pieces of news from last week. First, the fact that three basic LC organizations in Kraljevo threw out the entire nomination list of 125 candidates for various forums and organs. In Cacak five basic LC organizations did the same thing. Finally, at a meeting of the presidium of the Serbian SAWP conference, it was said that there are cases of "personal engagement by individuals to be registered for some function" and that "groups which are favoring their own candidates are spreading negative judgments about other possible candidates."

The throwing out of candidate lists and other occurrences which mass organizations have warned against qualify almost as pre-election, political scandals. Of course, it is difficult to believe that a few Valjevo and Cacak party organizations in fact think poorly of all proposed candidates and one should find out what in fact "they want to say" by this action of theirs. Nevertheless, it should be easy to get accustomed also to respecting their right to act as they have. By the same token in democratic elections there is personal engagement for one's own candidate, groups which support a specific person and point to the shortcomings of the opposing candidate. If all this sounds "too democratic" for some ears then such phenomena could be called...for instance, [as is the case] election excesses.

/13104

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7 April 1986

SCIENCE AND TECHNOLOGY

CZECHOSLOVAKIA

## ACCOMPLISHMENTS, PLANS OF SLOVAK ACADEMY OF SCIENCE

Prague RUDE PRAVO in Czech 27 Jan 86 p 5

/Text/ In the past 5 years, there have been efforts in the Slovak Academy of Science /SAS/ to optimize the creation of a scientific program for its departments in relation to the current and future needs of the national economy and in support of development of the socialist society. At the same time, there has also been an attempt to establish the necessary conditions for the creation and building of its own applications base and for strengthening the contact of the SAS departments with work areas of applied research, development, and production. The main goal of this effort is more effective utilization and further expansion of the R&D capabilities for basic research in Slovakia.

During the Seventh 5-Year Plan, valuable experience was gained in applying the target program approach in basic research. In building up the scientific capabilities of the SAS in the past few years, support was given to those fields of science (physics, microelectronics, cybernetics, materials research, and mechanics of machines) which form the theoretical background for the electronics industry, engineering, and metallurgy, the key fields of production of the national economy in the CSR and the SSR.

The fastest development is in the Institute of Technical Cybernetics, which today is the largest work area of the SAS.

The program document Opportunities for the Development and Utilization of the Natural Sciences in the Individual Branches of Social Activities in Slovakia To the Year 2000--the Development of Genetics, which was approved by the CPS Central Committee and the Government of the SSR, is especially important for the further development of our offices working on the biological sciences. On the basis of this document, the extent and level of genetic research in Slovakia have been substantially increased and the first most important steps have been taken in the field of genetic manipulation. But during the Seventh 5-Year Plan the program for the development of the biological sciences in Slovakia was not fully supported in personnel or material.

In the years of the Seventh 5-Year Plan, the participation of SAS offices in international socialist scientific integration, particularly in cooperation with scientific offices in the USSR, significantly increased. Within the

SAS, there has been successful development of the operations of an international base laboratory dealing with artificial intelligence and similarly the operations of an international base laboratory for the technical utilization of superconductors are being developed.

The SAS's Institute of Technical Cybernetics was changed over to a scientific production unit. Since 1985, this orientation has also been given to the Electronics Institute of the Center for Electrophysics Research of the SAS, the Institute of Construction and Architecture of the SAS, and the Center for Chemical Research of the SAS. In many of the other SAS work areas, applications units have been formed. Within the SAS, the development and production of experimental prototypes, functional models of various instruments, new materials of biological preparations, etc. have begun. The volume of experimental production in SAS work areas reached a sum of about 35 million korunas in 1985. Detached work area of the SAS institutes are being formed at the locations of large-scale production plants (Piestany, Banska Bystrica, Martin, and Slovenska L'upca) which act as transfer points to speed up application of scientific results.

In the past few years, there has also been a consolidation of smaller work areas into larger scientific entities; four SAS scientific centers, seven joint laboratories, and joint work areas of the SAS and the higher schools have been created.

The basic task of the SAS in the coming years is to continue with goal-oriented intensification of scientific work at all SAS work areas. Attention will be given to the international division of labor in scientific work and the tasks arising from governmental documents on research, development, and production of scientific instruments and on the development of genetics, biotechnology, research, and preparing special materials. Two of the nine programs of the state plan for basic research in the Eighth 5-Year Plan have their technical and organizational centers in Slovakia at the SAS. These are: Materials Produced by Rapid Cooling, for which the Physics Institute of the SAS's Center for Electrophysics Research is responsible, and Innovations in Diagnostic and Treatment Resources and Methods for Diseases of Modern Life, where the SAS's Center for Physiological Sciences is responsible.

Within the framework of preparing the R&D plan for the Eighth 5-Year Plan, the following tasks have been assigned to SAS work areas: Research in the Technology of GaAs (gallium arsenide) For High-speed Integrated Circuits supported by the Electronics Institute of the Center for Electrophysics Research of the SAS; a Control System for the Intelligent Robot and the Robotics Work Area to be carried out by the SAS's Institute of Technical Cybernetics; Meeting Czechoslovak Needs for Immunomodulators of Prepared Gene Manipulations directed by the Virological Institute of the SAS; and Research on Malignant Tumors carried out by the Institute of Experimental Oncology. The SAS's Institute of Molecular Biology will be occupied with the problems of enzymes for genetic engineering and the diagnosis of selected diseases. We can predict that we will also include here the task of Selected Superconductor Magnetic Systems, including material and cryotechnical support, to be carried out by the Electronics



Institute of the Center for Electrophysics Research of the SAS, and in particular the task of technical development oriented toward a new generation of computer systems.

The actual applications base of the SAS and the experimental production connected with it will be developed in three areas: the SAS developmental workshops in Bratislava and Kosice, scientific production units, and finally the applications units of the scientific centers and institutes of the SAS. In building them up, we figure on an increase of almost 1,300 employees in the next decade. With the indicated development, the applications base of the SAS by 1995 will represent about one-fifth of the overall SAS research capacity with approximately 8,100 employees.

6285/12228

CSO: 2400/196

7 April 1986

SCIENCE AND TECHNOLOGY

GERMAN DEMOCRATIC REPUBLIC

## RESULTS OF IMEKO MEETING

East Berlin MESSEN-STEUERN-REGELN in German No 11, Nov 85 pp 517-518

[Interview with the President of IMEKO, Dr.-Ing. L. Kuhn, by Chief Editor of msr, Dr.-Ing. D. Werner]

[Text] During the tenth world congress of the International Measurement Technology Confederation (IMEKO), which took place in Prague from 22 to 26 April 1985, the president of this organization kindly consented to an interview by the editor of MSR (Messen-Steuern-Regeln). Dr.-Ing. Ludvik Kuhn works full time as deputy institute director for research of the Prague National Research Institute for Machine Construction (SVUSS). He held the position of IMEKO president since the last IMEKO World Congress in West-Berlin in May 1982 and at the end of the meeting routinely turned the job over to his successor, Mr. G. Toumanoff/USA, in whose country the eleventh congress will take place in 1988.

[Question] Mr. President, as the tenth world congress of IMEKO, the Prague meeting represents an important anniversary. As president of the world-wide metrology organization you played an important part in your own country in the preparation and realization of this meeting. What is your assessment of the success of this very important meeting?

[Answer] As far as I can see the meeting did bring the expected great success. We were host to about 1000 participants from a total of 33 countries. About 300 visitors came from the socialist countries, and about 190 measurement specialists came from the West. The other participants were specialists from my own country. In this connection the interest of developing countries is also encouraging. For the first time Jordan, Nigeria and the Democratic Peoples Republic of Korea were represented at an IMEKO World Congress. Again UNESCO, not by chance, provided financial and moral support.

As is generally known, we selected the motto "New measurement technologies in the service of humanity" for this congress. If you review the program contents with this in mind, you will have to agree with me that the presentations were well attuned to the motto. This was also acknowledged by industry, which surprisingly sent many participants and acted as genuine partner of the universities, technical institutes and research establishments. The congress was opened by our Deputy Minister President

Prof. Dr. J. Obzina, who as part of his official function is responsible for development of science and technology in the CSSR. His presence and his opening remarks underlined the value of the congress. In addition to the many very interesting specialized and poster sessions, I would like to mention the many in-depth round table discussions which were sponsored by the technical committees of the IMEKO. Such discussions are especially valuable for the specialists since they permit intensive exchange of ideas. Also popular were the technical visits of measurement technology plants and laboratories.

In this connection I also want to mention that the comprehensive, 3100 printed pages of the meeting proceedings are a valuable resource for each metrologist. This offers an opportunity for those colleagues, who were not able to participate directly in the congress, to obtain detailed knowledge on actual results in their specialty.

Thus I do believe that the congress has been very successful and that it has not only served metrology specialists but that it also has served the education of a new generation of specialists, (IMEKO has a special technical committee TC 1 for this purpose), as well as related disciplines such as automation technology, machine construction, chemical processing technology, biomechanics, etc. An additional contributor to the success of the meeting was the physical environment. The Prague Palace of Culture proved in every respect to be an excellent meeting place.

[Question] The question about the success of the meeting is closely related to a question on progress in the field of metrology. What has happened here since the last world congress in 1982 and where do you see emphasis in the coming years?

[Answer] Development of a technical area is a continuous process. Thus metrology too moves ahead continuously, which does not always have to be documented by "sensational" inventions. Looking back over the past years it seems to me that we have taken over quite a few results from physics research into metrology. Several new effects have resulted in new improved measurement methods for determination of processing quantities. Examples are semiconductor effects which were incorporated in actual sensors, numerous laser applications, application of optoelectronics to metrology, methods based on acoustic emission or ultrasound measurement for determination of structural changes, and many more. Metrology and experimental research are closely related. Methods for modeling, identification and simulation were applied in metrology to permit model based design of processes, equipments and installations which could not be completely analyzed on a theoretical basis. This plays an important role in my own specialty, for instance, in machine design.

Naturally, development of metrology is influenced strongly by external requirements. Thus the areas of metrology research of the recent past and of today will certainly also be of importance in the coming years. Consider the world-wide problems dealing with large-scale savings of material and energy resources, or the comprehensive solution of environmental problems

(water, air, noise)! Or consider complex industrial control systems which require extensive measurement systems. In response to such real problems, foundations of metrology must be established and extended. This includes intensive development of a variety of sensors for collection of primary information, or the equipping of measuring systems with microprocessors to extend their intelligence. There is a need to develop methods for prediction of life expectancy of industrial process materials in order to solve the largely unsolved problem of material fatigue, with its sometimes catastrophic consequences.

It also is not good enough to provide new methods and processes for metrology, but they must be made so reliable that they can be introduced quickly into industrial practice.

In this connection I would like to mention automatic diagnostics, which I consider especially important. Construction of automatic diagnostic systems is the need of the moment. Automatic diagnostics are important for protection from major catastrophies (large industrial plants for energy supply, aircraft etc.), for maintenance based on actual state of an installation, and they also affect the production process itself (internal product control with computer based systems), especially in industrial, robot controlled manufacturing with few operators, and in CAD/CAM (computer aided design/computer aided manufacturing) systems. We work closely with the IFAC-TC 3 "Components and Instruments" and would like to extend this relationship further.

Much more can be said, surely, in answer to your question but I believe it has already become clear, that metrology will not suffer from a lack of problems to be solved. The solutions may often be difficult, but they are also very challenging.

[Question] Many papers at the meeting dealt with the problem to develop criteria for quality evaluation. What is the goal of quality metrology?

[Answer] If one wants to sell products, one must make sure that, at a reasonable price, certain quality criteria are satisfied. This means that they must satisfy government standards, quality and legal regulations, in addition to the requirements and needs of the customers. One also must consider that quality requirements are continuously increasing. This then forces, from this broader viewpoint, a merging of metrology and quality assurance considering quality development, -production, and -maintenance. Especially automated production and the wide introduction of CAD/CAM systems are impossible without continuous control of quality parameters. This became especially clear in the plenary presentation of Prof. H. Trumpold from your country, where the relationships between metrology and quality assurance in automated production processes was shown in a very vivid manner.

[Question] The congress, and especially the opening session, made it clear that the IMEKO does not have only an exclusively scientific-technical function. Compared with IFAC and similar organizations, experts from many countries with different social orders work here together peacefully and

in a friendly manner to achieve technical progress. How do you assess this political-social component?

[Answer] Scientists of many countries work together in IMEKO and meet on many occasions, not only for the World Congress, which meets every three years. In the time between there are numerous workshops and symposia for the specialists of the various technical committees. It is quite natural that understanding for each other and for the different ways of life is furthered through these meetings. In addition to the scientific goals, it is a concern of IMEKO to develop cooperation between East and West, and also between North and South. Precisely the inclusion of the developing countries we consider very important for peaceful and socially just development of mankind, and we are here in agreement with IFAC and the others in our parent organization, the FIACC (Five International ASSociation Committee): technical and social progress is only possible in the long term through cooperation and mutual understanding.

[Question] What is the reason for linking the IMEKO with the parallel exhibition of measuring, automation, and computing equipment MEACO '85, where 22 firms from 8 countries, among them our combine Carl Zeiss Jena, exhibit their modern products to the professional public?

[Answer] First I must point out that IMEKO has supported this exhibit considerably, but did not organize it. Responsible for it was, rather, the Prague agency of the Brno Fair and Exhibit Organization, and it was an official exhibit of the CSSR electronics industry with international participation. I believe that it gave a good overview of modern measurement and automation technology. For the participants in the IMEKO World Congress it surely provided an enrichment to be confronted on the spot with actual products of their special field. The exhibit was also quite popular. The value which we attach to it is also expressed by the fact that it was opened by the Representative of the Minister for the Electrotechnical Industry, Dr. Horvath.

[Dr. Ing. Werner] Mr. President, I wish to express my very cordial thanks, and also the thanks of the readers of the journal msr, that you found time for this interview, during these very stressing days. Your statements will surely be received with great interest.

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